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MPR Project No. 7762-502

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FINAL REPORT

THE SODIUM AND MACRONUTRIENT CONTENT OF USDA SCHOOL LUNCHES

January 29, 1988

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Under Subcontract to The Urban Institute
Contract No. FNS-53-3198-7-84

EXECUTIVE SUMMARY

This study examines the effects of the National School Lunch Program (NSLP) on students' dietary intake of food energy, sodium, and the three macronutrients--protein, fat, and carbohydrate. The study is based on data provided by 5,740 students who attended schools that participated in the NSLP and who responded to a 24-hour dietary recall survey that was conducted in the fall of 1980 in conjunction with the first National Evaluation of School Nutrition Programs (NESNP-1).

Two types of dietary intake variables are used in the study: (1) the quantitative intake (i.e., intake measured in grams, milligrams, or kilocalories) of each of the five selected dietary items, and (2) the proportional contribution of each macronutrient to the intake of food energy. The values of these variables for the entire 24-hour period of the dietary recall are examined, as are values for the lunch period only. The analytical approach entails computing mean values for both types of variables over both time periods for three student types--NSLP participants, students who eat alternative lunches, and students who do not eat lunch ("lunch skippers")--in each of twelve categories defined by age (5-10 years, 11-14 years, and 15-21 years), sex, and family income (all students and students who are income-eligible to receive free or reduced-price school lunches). T-tests are conducted for the statistical significance of differences between the sample mean dietary intakes of students who eat USDA lunches and those of the students who eat alternative lunches or who eat no lunch.

The study's data base shows that the rate of lunch skipping is low (2 to 4 percent) among young students and somewhat higher (10 to 17 percent) among older students. These low rates mean that the data base provides so few observations on lunch skippers that statistical tests for dietary differences between NSLP participants and lunch skippers are often unreliable. For this reason, the results of these tests are not presented in this executive summary.

Findings from the analysis of the effects of the NSLP vis-a-vis an alternative lunch on quantitative dietary intake and on sources of food energy for the full (all-income) sample of students are summarized in Table ES.1. Corresponding findings from the analyses of the low-income subsample are summarized in Table ES.2. The most important of these findings are highlighted below.

TABLE ES.1

SUMMARY OF FINDINGS: DIFFERENCES IN MEAN DIETARY INTAKE BETWEEN NSLP PARTICIPANTS AND STUDENTS WHO EAT ALTERNATIVE LUNCHES (FULL SAMPLE)

	Ages 5-10 Years		Ages 11-14 Years		Ages 15-21 Years	
	Lunch Intake	24-Hr. Intake	Lunch Intake	24-Hr. Intake	Lunch Intake	24-Hr. Intake
Food Energy						
Males	0	0	0	0	0	0
Females	-	0	++	0	0	0
Protein						
Males	++	++	++	+	0	0
Females	++	0	++	0	0	0
Fat						
Males	0	0	0	0	0	0
Females	-	0	++	0	0	0
Carbohydrate						
Males	--	0	0	0	0	0
Females	--	0	0	0	0	0
Sodium						
Males	0	0	0	0	0	0
Females	--	0	0	0	0	0
% of Food Energy from Protein						
Males	++	++	++	++	++	0
Females	++	++	++	+	0	0
% of Food Energy from Fat						
Males	0	0	0	0	0	0
Females	0	0	0	++	0	0
% of Food Energy from Carbohydrate						
Males	--	--	--	-	0	0
Females	--	0	--	-	-	0

SOURCE: The Sodium and Macronutrient Content of USDA School Lunches, 1988. Data are from the National Evaluation of School Nutrition Programs, fall 1980.

+(++): Difference between NSLP participants and nonparticipants is positive and significant at the .05(.01) level.
-(--): Difference between NSLP participants and nonparticipants is negative and significant at the .05(.01) level.
0: No statistically significant difference between NSLP participants and nonparticipants.

TABLE ES.2

SUMMARY OF FINDINGS: DIFFERENCES IN MEAN DIETARY INTAKE BETWEEN NSLP PARTICIPANTS AND STUDENTS WHO EAT ALTERNATIVE LUNCHES (LOW-INCOME SUBSAMPLE)

	Ages 5-10 Years		Ages 11-14 Years		Ages 15-21 Years	
	Lunch Intake	24-Hr. Intake	Lunch Intake	24-Hr. Intake	Lunch Intake	24-Hr. Intake
Food Energy						
Males	0	0	0	0	0	0
Females	0	0	+	0	0	0
Protein						
Males	++	0	++	0	+	0
Females	++	++	++	0	0	0
Fat						
Males	0	0	0	0	0	0
Females	0	0	+	0	0	0
Carbohydrate						
Males	0	0	0	0	0	+
Females	0	0	0	0	-	0
Sodium						
Males	0	0	0	0	0	0
Females	-	0	0	0	0	0
% of Food Energy from Protein						
Males	++	++	++	0	+	0
Females	++	++	++	0	++	+
% of Food Energy from Fat						
Males	0	0	0	0	0	-
Females	0	0	0	0	0	-
% of Food Energy from Carbohydrate						
Males	0	-	-	0	0	0
Females	0	0	-	0	0	0

SOURCE: The Sodium and Macronutrient Content of USDA School Lunches, 1988. Data are from the National Evaluation of School Nutrition Programs, fall 1980.

NOTE: The low-income subsample consists of students from families whose incomes do not exceed 185 percent of the poverty guidelines.

+(++): Difference between NSLP participants and nonparticipants is positive and significant at the .05(.01) level.
-(--): Difference between NSLP participants and nonparticipants is negative and significant at the .05(.01) level.
0: No statistically significant difference between NSLP participants and nonparticipants.

NSLP Effects on the Quantitative Intake of Food Energy, Macronutrients, and Sodium. Five principal findings emerge from the analysis of the quantitative measures of dietary intake:

1. The lunch intake of protein by NSLP participants is greater than that of students who eat alternative lunches. This is true for students ages 5-10 years and 11-14 years in any sex-income category and for low-income males ages 15-21 years.

2. Female students ages 5-10 years and 11-14 years experience the greatest number of significant NSLP effects on quantitative dietary intake. Also, the signs of many of the program's impacts change as the analysis shifts from the youngest to the middle age group of females. Female NSLP participants ages 5-10 years have intakes of food energy, macronutrients (other than protein), and sodium that are less than or equal to those of their counterparts who eat alternative lunches. Conversely, among females ages 11-14 years, these dietary intakes by NSLP participants equal or exceed those of students who eat alternative lunches.

3. Among male students of all ages, there are virtually no differences in quantitative dietary intake at lunch (excepting the intake of protein) between NSLP participants and those who eat other lunches.

4. Among older students (ages 15-21 years) of either sex, there are very few differences between NSLP participants and students who eat alternative lunches in the lunch intake of food energy, macronutrients (including protein), and sodium.

5. Findings from the analysis of quantitative dietary intake over 24 hours suggest an attenuation over time of NSLP effects. Among students ages 5-10 years and 11-14 years, positive differentials in protein intake between those who eat USDA lunches and those who eat alternative lunches continue to be observed in some sex-income categories; however, virtually no other effects of eating a USDA lunch versus an alternative lunch are observed in the twelve age-sex-income categories. For example, in no age-sex category for either the full sample or the low-income subsample do NSLP participants and students who eat other lunches differ in 24-hour food energy intake.

These findings should be considered in light of those of Wellisch et al. (volumes 1 and 2, 1983) from the original analysis of the NESNP-1 data. That study used regression models to analyze the intake of food energy, protein, and ten micronutrients. For the full sample of students, it found that NSLP participants have greater lunch intakes of food energy, protein, and eight micronutrients than do students who eat other lunches. For the same sample, it also found positive NSLP effects on the 24-hour

intake of food energy, protein, and seven micronutrients. Somewhat fewer positive impacts of the program were found for the low-income subsample.

The only apparent discrepancies between the findings from the two studies are with respect to the effects of USDA school lunches versus other lunches on energy intake (at lunch and over 24 hours) as estimated on the full NESNP-1 sample. We find no programmatic effects, whereas Wellisch et al. found positive effects. These differences in findings may be due to differences in the analysis approaches--we examined simple differences in mean intake values, whereas Wellisch et al. examined regression-adjusted intake differences.

NSLP Effects on Sources of Food Energy. When the proportional contribution of each of the three macronutrients to the lunch intake of food energy is analyzed, protein is found to be a more important source of food energy for students who eat USDA lunches than for students who eat alternative lunches. For students in most of the study's twelve age-sex-income categories, the opposite is true for carbohydrate. For students under 15 years of age, these effects of the NSLP tend to persist when the period of analysis is extended to a full 24 hours.

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A. INTRODUCTION

The first National Evaluation of School Nutrition Programs (NESNP-1) examined the impacts of the National School Lunch Program (NSLP) on the intake of ten micronutrients,[1] protein, and food energy. This study extends the NESNP-1 analysis to include all macronutrients (fat and carbohydrate, as well as protein) and sodium.[2] The lunch intake and daily (i.e., 24-hour) intake of food energy, macronutrients, and sodium by students who eat USDA lunches are compared with those of students who eat alternative lunches. More limited comparisons of daily intake are made between NSLP participants and students who skip lunch entirely. The comparisons are based on descriptive statistics (means, standard deviations, and quartiles) disaggregated by age, sex, and income-eligibility for free or reduced-price USDA school meals. These statistics were computed from data provided by a sample of students who attended elementary and secondary schools that serve USDA lunches. Students who attended schools that did not participate in the NSLP are not represented in the sample.

The next section of this report examines the current actual and recommended intake of macronutrients and sodium in the national diet. Findings from the NESNP-1 analysis of the impact of the NSLP on nutrient intake are briefly reviewed in Section C. The sources of data for the current study are described in Section D, as are the procedures that were used

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[1]The micronutrients that were analyzed under NESNP-1 are calcium, phosphorus, riboflavin, magnesium, vitamin A, vitamin B6, niacin, thiamin, iron, and vitamin C.

[2]An original goal of this study was to analyze the added-sugar content of USDA school lunches. However, inadequate data on the added-sugar content of processed foods precluded pursuing this goal.

to select the various analysis samples. Findings from an analysis of NSLP impacts on the intake of food energy, macronutrients and sodium are presented in Section E. The final section of the report summarizes the principal findings from the research and presents conclusions on the nutritional quality of USDA school lunches that can be drawn from those findings.

B. CURRENT ACTUAL AND RECOMMENDED INTAKE OF MACRONUTRIENTS AND SODIUM

The human body derives food energy from the three macronutrients--protein, fat, and carbohydrate--and from alcohol. Data from the 1977-78 Nationwide Food Consumption Survey show that the average proportion of food energy obtained by school-age children from protein is 15-16 percent; fat, 38-40 percent; and carbohydrate, 44-48 percent (USDA/SEA, 1980, Table 3.4). Alcohol provides less than 0.3 percent of food energy for this age group and, consequently, is not considered in this report.

Food proteins provide amino acids that are essential for the synthesis of body proteins and other tissue constituents. School-age children obtain protein primarily from three major food groups: meat, poultry, and fish; milk and milk products; and grain products. The National Research Council (NRC) specifies an allowance for protein in terms of grams of daily protein intake per kilogram of body weight--.8 grams of protein per kilogram of body weight--rather than the percent contribution of protein to total food energy (NRC, 1980, p. 46).

Dietary fat provides the body with essential fatty acids and is also a carrier of fat-soluble vitamins. The three previously mentioned food groups, as well as fats and oils, and vegetables are the principal sources of fat in the diets of school-age children. Allowances for dietary

fat have not been formally established; however, the American Academy of Pediatrics (1986) suggests that dietary fat should provide 30 to 40 percent of total food energy. Furthermore, the USDA/DHHS Dietary Guidelines for Americans (1985) recommends that for the U.S. population as a whole it is sensible to reduce the consumption of fat.

Carbohydrate in the diet is contributed largely by sugars (primarily from milk and milk products, fruits, soft drinks, and sweets), and by starches (primarily from grain products and vegetables). The NRC has established no specific dietary allowance for carbohydrate (NRC, 1980, p. 33); however, it recommends that a "reasonable proportion" of food energy should be derived from carbohydrate to avoid excessive breakdown of body proteins, loss of sodium, and dehydration.

Through its presence in the body's extracellular fluid, sodium helps to maintain an equilibrium between intracellular and extracellular fluid. The NRC estimates that a safe range of dietary intake of sodium is 600-1200 milligrams for children ages 7-10 years and 900-2700 milligrams for adolescents 11 years and older. Chronic excessive sodium intake may contribute to the occurrence of hypertension among sodium-sensitive individuals. For the entire population, USDA/DHHS (1985) recommends the avoidance of too much sodium.

C. REVIEW OF FINDINGS FROM THE NESNP-1 ANALYSIS

In NESNP-1, multivariate regression was used to analyze the effects of school nutrition programs in the 1980-81 academic year on meal-specific and 24-hour intakes of food energy, protein, and selected micronutrients (Wellisch et al., volumes 1 and 2, 1983). The multivariate framework permitted the effects of participation in different nutritional programs or

combinations of programs to be estimated while controlling for the characteristics of students and their families that may influence dietary quality. Separate analyses were conducted for (1) all students, (2) below-sample-median-income students, (3) elementary school students, and (4) secondary school students. Male and female students and lunch skippers and lunch eaters were included together in each analysis, but binary variables were used to control for the effects of these differences.

The NESNP-1 analysis found that students who participate in the NSLP have significantly higher lunch intakes of all of the ten micronutrients that were considered, except vitamin C and iron, than do nonparticipants who eat alternative lunches. With the exception of thiamin, similar results were obtained when 24-hour dietary intakes were analyzed. The study also found that NSLP participants have higher lunch and 24-hour intakes of protein, and participating secondary school students have a higher intake of food energy at lunch. The high density of most nutrients relative to the intake of food energy at lunch is primarily responsible for the greater lunch intake of nutrients by NSLP participants. The greater 24-hour intake of nutrients by this group appears to be a function of both higher nutrient densities and greater intake of food energy relative to students who eat alternative lunches.

The NESNP-1 analysis also found that the effects of the NSLP on the nutrient intake of below-sample-median-income students are similar to its effects on the full sample of students. Controlling for income, few differences were found between elementary and secondary school children in the dietary effects of participation in the program.

D. DATA SOURCES AND SAMPLE SELECTION

This study is based on data for the 1980-81 academic year from three NESNP-1 files:

- **Student Turnover File.** This file is a compendium of NESNP-1 data from several specialized files, including the two files described below. It is the basis for much of the original NESNP-1 analysis. Data on student characteristics, family composition and economic status, student participation in school nutrition programs, and student dietary intake are included in the file. For the current analysis, the file's chief deficiency is its lack of data on the intake of fat and carbohydrate.

- **Food Item File (FIF).** This file provides information on the source, time of consumption, weight, and nutrient content of each food item that was eaten during a 24-hour period by each student who participated in the NESNP-1 dietary recall survey. The nutrient content of food items was computed on the basis of the Highland View Hospital-Case Western Reserve University (HVH-CWRU) nutrient data base.[3]

- **Food Aggregate File (FAF).** For the individual students who participated in the NESNP-1 dietary recall survey, this file provides data on the intake of micronutrients, macronutrients, trace elements, sodium, etc., that have been aggregated over (1) all of the food items that were eaten during the entire 24-hour recall period, and (2) all of the food items that were eaten during specific segments of that period (e.g., the hours during which lunch is typically eaten). The information in this file was obtained by aggregating over the food-item nutrient data in the FIF.

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[3]The NESNP-1 nutritional values were computed from the HVH-CWRU data base at a point in time during the period 1981 to 1983. These values are the basis for the current study. Independent of any change in the NSLP or in eating patterns, there are two reasons why a new study of the NSLP might yield different results from those reported herein: (1) the nutritional content of a food item may change over time and (2) the measurement of the nutritional content of an unchanging food item may yield different results as scientific measurement procedures change over time.

Data from these three files were merged to create the analysis file for this study. Most of the variables in the analysis file were obtained from the Student Turnover File; however, due to the absence of data on fat and carbohydrate intake in that file, it was necessary to obtain that information from the FAF. To minimize the effects of possible data inconsistencies across different files, the FAF provided all of the dietary intake data that were used in this study. FIF data on the source of each food item and the time at which it was eaten were used to determine whether a student ate lunch and, if so, whether it was a USDA school lunch.

Of the 6,556 public school students in grades 1 through 12 who participated in NESNP-1 and for whom some data are available, 579 have no value for the sampling weight variable in the original data files. These students constitute a special supplementary sample of students who attended schools that did not serve USDA lunches. Because this study requires the use of sampling weights to compute descriptive statistics for the population represented by the NESNP-1 sample, the cases with missing weights are omitted from the analysis file. The basic sample of 5,977 cases is representative of the national population of students in public schools during the 1980-81 academic year. All of these cases have valid sampling weights, but 237 (4 percent) are missing nutrient intake data and, hence, are excluded from the analysis file. Thus, the full analysis file consists of 5,740 cases with sampling weights and with complete dietary intake data. The exclusion from the analysis file of 4 percent of the cases in the basic sample is not believed to be a significant source of bias in the statistical findings presented below.

An analysis of the effects of the NSLP on students whose family incomes are sufficiently low that they qualify for free or reduced-price lunches is based on a subset of the full analysis file. Excluded from the low-income subsample are 134 cases with missing family income data. Of the 5,606 cases in the full analysis file with valid family income data, 2,399 (43 percent) have incomes less than or equal to 185 percent of the poverty guidelines, thus qualifying the students for free or reduced-price USDA school lunches. These cases constitute this study's low-income subsample.

E. FINDINGS FROM THE ANALYSIS

Our study of the effects of the NSLP on the intake of food energy, macronutrients, and sodium is based on simple descriptive statistics--the mean, standard deviation, and the thresholds of the second, third, and fourth quartiles. These statistics have been generated for two different types of variables:

1. Measures of dietary intake
2. Measures of the proportional contributions of the three macronutrients to the intake of food energy

Each variable is analyzed for two time periods: (1) the entire period of the NESNP-1 24-hour dietary recall and (2) the period during those 24 hours when lunch is typically eaten.

The analysis file is stratified on the basis of sex and age (ages 5-10, 11-14, and 15-21 years)--personal characteristics that are important determinants of dietary intake and dietary requirements. The file is also stratified on the basis of family income (families of all incomes and families whose incomes are sufficiently low that the children are eligible

to receive free or reduced-price USDA school lunches). In considering the finding presented in this section, the reader should bear in mind that the students from low-income families do not constitute an independent NESNP-1 sample; rather, they are a subset of the full sample of students from families of all incomes. Within each of the twelve age-sex-income categories, descriptive statistics on the variables of interest have been obtained for students who eat USDA lunches, students who eat alternative lunches, and students who do not eat any lunch. Since, by definition, students who do not eat lunch have no lunch intake of food, their dietary intake is analyzed on a 24-hour basis only.

Weighted and unweighted counts of students in the six categories defined by the study's age and sex strata are provided in Table 1 for the full sample and in Table 2 for the low-income subsample. These tables show that the incidence of lunch skipping among students is low. It is 2 to 4 percent among students ages 5-10 years, 3 to 5 percent among students ages 11-14 years, and 10 to 17 percent among students ages 15-21 years. These low rates mean that this study's analysis file provides small numbers of observations on lunch skippers. Consequently, our estimates of differences in 24-hour dietary intake between NSLP participants and lunch skippers are often unreliable. For this reason, dietary intake comparisons between lunch skippers and NSLP participants are not highlighted in this report.

1. Dietary Intake at Lunch

For the study's twelve age-sex-income categories, Table 3 presents sample mean values of the lunch intake of food energy, the three macronutrients, and sodium for NSLP participants and for students who eat alternative lunches. Appendix Tables A.1-A.3 (full sample) and B.1-B.3

TABLE 1

WEIGHTED AND UNWEIGHTED
SAMPLE SIZES FOR SCHOOL LUNCH ANALYSIS--
FULL SAMPLE

Target Group		Sample Size			
		Unweighted		Weighted	
		N	%	N	%
5-10 Years Old					
Male:	NSLP Participant	920	79%	4.9m	74%
	Non-USDA Lunch	225	19%	1.6m	24%
	No Lunch	19	2%	.1m	2%
Female:	NSLP Participant	907	79%	5.1m	75%
	Non-USDA Lunch	222	19%	1.6m	23%
	No Lunch	15	1%	.1m	2%
11-14 Years Old					
Male:	NSLP Participant	714	76%	4.4m	72%
	Non-USDA Lunch	188	20%	1.5m	24%
	No Lunch	40	4%	.2m	4%
Female:	NSLP Participant	665	71%	3.8m	65%
	Non-USDA Lunch	227	24%	1.7m	29%
	No Lunch	48	5%	.3m	5%
15-21 Years Old					
Male:	NSLP Participant	484	63%	3.1m	56%
	Non-USDA Lunch	217	28%	1.9m	34%
	No Lunch	70	9%	.5m	10%
Female:	NSLP Participant	390	50%	2.3m	41%
	Non-USDA Lunch	285	37%	2.5m	44%
	No Lunch	104	13%	.8m	15%

SOURCE: The Sodium and Macronutrient Content of USDA School Lunches, 1988. Data are from the National Evaluation of School Nutrition Programs, fall 1980.

TABLE 2

WEIGHTED AND UNWEIGHTED
SAMPLE SIZES FOR SCHOOL LUNCH ANALYSIS--
STUDENTS ELIGIBLE FOR FREE OR REDUCED-PRICE LUNCHES

Target Group		Sample Size: Unweighted N	Unweighted %	Weighted N	Weighted %
5-10 Years Old					
Male:	NSLP Participant	444	87%	2.1m	83%
	Non-USDA Lunch	54	11%	.4m	14%
	No Lunch	14	3%	.1m	2%
Female:	NSLP Participant	447	87%	2.2m	82%
	Non-USDA Lunch	55	11%	.4m	14%
	No Lunch	11	2%	.1m	4%
11-14 Years Old					
Male:	NSLP Participant	339	87%	1.7m	85%
	Non-USDA Lunch	34	9%	.2m	12%
	No Lunch	15	4%	.1m	3%
Female:	NSLP Participant	319	75%	1.5m	69%
	Non-USDA Lunch	80	19%	.6m	26%
	No Lunch	25	6%	.1m	5%
15-21 Years Old					
Male:	NSLP Participant	196	75%	.9m	69%
	Non-USDA Lunch	37	14%	.2m	18%
	No Lunch	28	11%	.2m	13%
Female:	NSLP Participant	189	63%	.8m	55%
	Non-USDA Lunch	69	23%	.4m	28%
	No Lunch	43	14%	.2m	17%

SOURCE: The Sodium and Macronutrient Content of USDA School Lunches, 1988. Data are from the National Evaluation of School Nutrition Programs, fall 1980.

NOTE: Students eligible for free or reduced-price USDA school lunches constitute a subset of the students in this study's full sample. Weighted and unweighted counts of the full sample are provided in Table 1.

(low-income subsample) provide additional statistics for students in these categories--the standard deviations and thresholds for the second, third, and fourth quartiles of dietary intake.

Five- to ten-year-old students from both low-income and all-income families receive significantly more protein from USDA school lunches than from alternative lunches. Conversely, all-income students in this age range receive less carbohydrate from USDA lunches than from other lunches. The NESNP-1 data do not show any significant differences in the lunch intake of food energy and fat between male students ages 5-10 years who eat USDA lunches and those who eat alternative lunches. However, all-income female participants in this age range obtain less of both food energy and fat. The data also show that the youngest female students (both low-income and all-income) receive significantly less sodium from USDA lunches than from alternative lunches.[4]

Among all-income students ages 11-14 years, the dietary intakes of those who eat USDA lunches are more similar to those who eat alternative lunches than is true for the youngest group of students. No significant differences exist between these two groups of 11- to 14-year-olds in terms of their lunch intake of carbohydrate and sodium. However, as with the youngest students, a relatively high lunch intake of protein by students who eat USDA lunches is observed for this age group. Fat intake among NSLP

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[4]Data on the intake of sodium through the discretionary use of table salt (i.e., salt added at the time of food consumption) are not available in the NESNP-1 files. This does not invalidate comparisons between the sodium intake of NSLP participants and nonparticipants in the NESNP-1 sample; however, it means that caution must be exercised in comparing statistics on NESNP-1 sodium intake with standards for sodium intake.

participants in the 11-14 year old group is greater for females but not for males. Females in this age range also receive more food energy from USDA lunches than from alternative lunches.

The Table 3 results for females indicate a shift between the ages 5-10 years and 11-14 years in the qualitative impacts of the NSLP. For female students in the full sample, the program's impact on the lunch intake of food energy and fat changes from being negative for 5- to 10-year-olds to being positive for 11- to 14-year-olds. Also, the program's impact on the lunch intake of carbohydrate and sodium changes from being strongly negative for the youngest female students to being essentially zero for the middle age group of female students. Similar changes are observed for females in the low-income subsample. All of these changes are consistent with a shift as female students age from 5-10 years to 11-14 years toward equal or greater dietary intake at lunch by NSLP participants relative to those who eat alternative lunches.

Among the oldest students, both male and female, there are very few differences in dietary intake at lunch between NSLP participants and students who eat other lunches. Indeed, for students ages 15-21 years in the full sample, Table 3 shows no significant differences in dietary intake between those who eat USDA lunches and those who eat other lunches. Only two significant differences are shown for the oldest students in the low-income subsample: male participants in the NSLP have a higher lunch intake of protein than do male students who eat alternative lunches, and female NSLP participants have a lower lunch intake of carbohydrate than do female students who eat alternative lunches.

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TABLE 3

MEAN LUNCH INTAKE OF FOOD ENERGY, PROTEIN, FAT, CARBOHYDRATE, AND SODIUM
(Weighted Data)

Dietary Item/ Population		Students Ages 5-10 All Income	Students Ages 5-10 Low Income	Students Ages 11-14 All Income	Students Ages 11-14 Low Income	Students Ages 15-21 All Income	Students Ages 15-21 Low Income
Food Energy (Kcal)							
Male:	NSLP Participant	595	589	758	710	907	849
	Non-USDA Lunch	636	543	718	632	834	764
Female:	NSLP Participant	532	540	613	586	593	559
	Non-USDA Lunch	577*	528	518**	499*	571	708
Protein (gm)							
Male:	NSLP Participant	25.5	26.5	30.4	29.7	36.3	34.6
	Non-USDA Lunch	19.9**	17.2**	23.7**	20.6**	31.2	26.7*
Female:	NSLP Participant	22.2	22.7	25.2	24.4	23.3	23.1
	Non-USDA Lunch	19.2**	16.9**	17.8**	18.0**	21.2	23.5
Fat (gm)							
Male:	NSLP Participant	26.2	26.0	33.6	31.6	38.6	36.4
	Non-USDA Lunch	28.6	24.4	31.8	28.6	37.8	34.9
Female:	NSLP Participant	22.8	22.7	27.9	26.7	27.4	23.8
	Non-USDA Lunch	25.6*	21.7	22.7**	21.4*	25.3	31.3
Carbohydrate (gm)							
Male:	NSLP Participant	65.8	63.8	84.9	78.0	105.4	97.1
	Non-USDA Lunch	78.0**	65.9	86.3	73.9	93.7	87.7
Female:	NSLP Participant	60.9	62.9	66.7	63.2	64.7	64.1
	Non-USDA Lunch	69.8**	68.2	62.1	60.0	66.3	84.8*
Sodium (mg)[1]							
Male:	NSLP Participant	870	912	1014	977	1140	1060
	Non-USDA Lunch	921	787	1024	1165	1290	1211
Female:	NSLP Participant	722	721	816	757	832	788
	Non-USDA Lunch	907**	899*	919	992	782	1011

SOURCE: The Sodium and Macronutrient Content of USDA School Lunches, 1988. Data are from the National Evaluation of School Nutrition Programs, fall 1980.

NOTE: The low-income subsample consists of students from families whose incomes do not exceed 185 percent of the poverty guidelines.

[1]Does not include sodium obtained through the discretionary use of table salt.

*(**): Different from the mean intake of NSLP participants in the same age, sex, and income category at the .05(.01) level of significance, using a two-tailed t-test.

Our principal findings regarding the effects of the NSLP on the lunch intake of food energy, macronutrients, and sodium can be summarized as follows:

- NSLP participants ages 5-10 years and 11-14 years of both sexes and from both low-income and all-income families have larger lunch intakes of protein than do their counterparts who eat alternative lunches. This is also true of low-income male students ages 15-21 years.
- Among female students ages 5-10 years, dietary intakes (other than protein) at lunch by NSLP participants are less than or equal to those of students who eat alternative lunches. Among female students ages 11-14 years, this pattern is reversed, with NSLP participants having dietary intakes that are greater than or equal to those of students who eat alternative lunches.
- As female students age from being 11-14 years old to being 15-21 years old, the dietary intakes at lunch by NSLP participants and by those who eat alternative lunches converge. This is true even for protein.
- Among male students of all ages, there are virtually no differences in lunch-time dietary intakes (other than protein) between NSLP participants and those who eat other lunches.

2. 24-Hour Dietary Intake

For the twelve age-sex-income categories defined above, Table 4 presents mean values of the 24-hour intake of food energy, macronutrients, and sodium for students who eat USDA lunches, students who eat alternative lunches, and students who do not eat any lunch. Standard deviations and thresholds for the second, third, and fourth quartiles of these dietary intake measures are presented in Appendix Tables A.4-A.6 (full sample) and B.4-B.6 (low-income subsample). Not surprisingly, the conclusion most firmly supported by the mean values in Table 4 is that NSLP participants

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TABLE 4

MEAN 24-HOUR INTAKE OF FOOD ENERGY, PROTEIN, FAT, CARBOHYDRATE, AND SODIUM
(Weighted Data)

Dietary Item/ Population		Students Ages 5-10 All Income	Students Ages 5-10 Low Income	Students Ages 11-14 All Income	Students Ages 11-14 Low Income	Students Ages 15-21 All Income	Students Ages 15-21 Low Income
Food Energy (Kcal)							
Male:	NSLP Participant	2052	2002	2512	2422	3122	3007
	Non-USDA Lunch	2017	1982	2488	2217	3146	2708
	No Lunch	(1457)	(1364**)	1902**	(1732)	2449*	(2316)
Female:	NSLP Participant	1775	1850	1890	1925	1871	1773
	Non-USDA Lunch	1826	1732	1854	1834	1825	1944
	No Lunch	(1244)	(1210)	1176**	(1434*)	1383**	1235**
Protein (gm)							
Male:	NSLP Participant	78	79	95	89	116	111
	Non-USDA Lunch	70**	68	87*	77	119	95
	No Lunch	(51)	(49**)	71**	(53*)	87**	(72*)
Female:	NSLP Participant	66	68	70	70	69	66
	Non-USDA Lunch	62	57**	66	68	64	66
	No Lunch	(39)	(36*)	39**	(47**)	49**	49**
Fat (gm)							
Male:	NSLP Participant	84	82	105	101	131	122
	Non-USDA Lunch	82	77	101	86	136	124
	No Lunch	(53)	(51**)	69**	(61*)	94**	(94)
Female:	NSLP Participant	71	73	79	81	78	72
	Non-USDA Lunch	74	68	74	74	78	86
	No Lunch	(41)	(40)	47**	(62)	57**	51**
Carbohydrate (gm)							
Male:	NSLP Participant	251	242	303	295	374	374
	Non-USDA Lunch	259	262	315	289	365	310*
	No Lunch	(149*)	(180*)	254*	(249)	320	(303)
Female:	NSLP Participant	222	236	229	234	229	219
	Non-USDA Lunch	233	228	237	230	223	234
	No Lunch	(182)	(180)	153**	(178*)	168**	149**
Sodium (mg)[1]							
Male:	NSLP Participant	2721	2653	3297	3264	4029	3805
	Non-USDA Lunch	2644	2449	3317	3175	4134	3675
	No Lunch	(1493)	(1897)	2529	(3108)	3094*	(3033)
Female:	NSLP Participant	2266	2380	2409	2405	2414	2332
	Non-USDA Lunch	2377	2230	2469	2607	2395	2506
	No Lunch	(1413)	(1279)	1370**	(1502**)	1495**	1383**

SOURCE: The Sodium and Macronutrient Content of USDA School Lunches, 1988. Data are from the National Evaluation of School Nutrition Programs, fall 1980.

NOTE 1: The low-income subsample consists of students from families whose incomes do not exceed 185 percent of the poverty guidelines.

NOTE 2: Parentheses ( ) around a mean value indicate that it is based on 30 or fewer unweighted cases. Because of small sample sizes, these values and associated tests of significance may not be reliable.

[1]Does not include sodium obtained through the discretionary use of table salt.

*(**): Different from the mean intake of NSLP participants in the same age, sex, and income category at the .05(.01) level of significance, using a two-tailed t-test.

have higher 24-hour intakes of food energy, macronutrients, and sodium than do students who do not eat any lunch.

Among students ages 5-10 years and 11-14 years, Table 4 shows that NSLP participation has positive effects on the 24-hour intake of protein for three of the eight age-sex-income categories. This contrasts with our previous finding of positive NSLP effects on the lunch intake of protein by students in all eight of these categories.

For all other dietary items considered, Table 4 shows that, among all-income and low-income students of any age and either sex, there are virtually no significant differences in 24-hour intakes between those who eat USDA lunches and those who eat alternative lunches. The only exception to this pattern is for low-income male students ages 15-21 years. NSLP participants in this group have a greater intake of carbohydrate over 24 hours than do those who eat other lunches.

When compared with findings for the lunch period alone, the small number of significant differences in the 24-hour intake of food energy, macronutrients, and sodium between NSLP participants and students who eat alternative lunches suggests an attentuation of the program's effects as the measurement period expands. Devaney et al. (1987) report a similar attenuation over time of the effects of the School Breakfast Program on the intake of micronutrients. A possible explanation of the small number of significant effects of school meals on nutrient intake over 24 hours is that some of the food received through those meals replaces food that otherwise would be eaten at other meals. Another possibility is that participants in the USDA school meal programs would have different diets than nonparticipants even if they were not receiving school meals. Regard-

less of the explanation, dietary intake at other meals tends to offset dietary intake at USDA school meals and therefore diminishes the 24-hour effects of the USDA meals.

3. Sources of Food Energy--Lunch

We have noted that 1977-78 NFCS data show that protein accounts for 15-16 percent of the food energy obtained by school-age children, while fat accounts for 38-40 percent, and carbohydrate accounts for 44-48 percent (USDA/SEA, 1980). The American Academy of Pediatrics (1986) suggests limiting fat intake to 30-40 percent of food energy. Corresponding guidelines for the intake of protein and carbohydrate have not been established.

Fat accounts for 37-40 percent of the lunch food energy of students ages 5-21 years, regardless of NSLP participation status (Table 5).[5] In comparing these percentages to the American Academy of Pediatrics' guideline for fat intake, it should be noted that the guideline pertains to the 24-hour intake of fat, rather than to the lunch intake. Table 5 shows that the differences between NSLP participants and students who eat other lunches in terms of the proportion of lunch energy provided by fat are small and follow no consistent pattern. In addition, income, age, and sex do not appear to be important determinants of the proportion of lunch food energy consumed by students in the form of fat.

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[5]Standard deviations and thresholds for the second, third, and fourth quartiles of measures of the proportion of lunch food energy provided by fat, protein, and carbohydrate are provided in Tables A.7-A.9 (full sample) and B.7-B.9 (low-income subsample).

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TABLE 5

MEAN PROPORTION OF LUNCH FOOD ENERGY PROVIDED BY PROTEIN, FAT, AND CARBOHYDRATE
(Weighted Data)

Macronutrient/ Population		Students Ages 5-10		Students Ages 11-14		Students Ages 15-21	
		All Income	Low Income	All Income	Low Income	All Income	Low Income
Proportion of Lunch Energy from Protein							
Male:	NSLP Participant	17.4	18.1	16.6	17.1	16.6	16.7
	Non-USDA Lunch	12.5**	12.7**	13.5**	12.2**	14.1**	13.5*
Female:	NSLP Participant	16.9	17.0	16.7	16.6	16.0	17.1
	Non-USDA Lunch	13.7**	13.4**	13.4**	13.7**	14.3	13.0**
Proportion of Lunch Energy from Fat							
Male:	NSLP Participant	38.4	38.3	38.8	38.7	37.7	37.6
	Non-USDA Lunch	38.4	39.0	38.2	36.3	38.8	38.2
Female:	NSLP Participant	37.5	36.9	39.9	39.7	40.0	37.3
	Non-USDA Lunch	37.1	36.4	38.3	37.3	37.0	39.3
Proportion of Lunch Energy from Carbohydrate							
Male:	NSLP Participant	44.2	43.6	44.7	44.2	45.7	45.7
	Non-USDA Lunch	49.1**	48.3	48.3**	51.5*	47.1	48.4
Female:	NSLP Participant	45.6	46.0	43.4	43.7	44.0	45.6
	Non-USDA Lunch	49.2**	50.2	48.3**	49.0*	48.7*	47.7

SOURCE: The Sodium and Macronutrient Content of USDA School Lunches, 1988. Data are from the National Evaluation of School Nutrition Programs, fall 1980.

NOTE: The low-income subsample consists of students from families whose incomes do not exceed 185 percent of the poverty guidelines.

*(**): Different from the mean intake of NSLP participants in the same age, sex, and income category at the .05(.01) level of significance, using a two-tailed t-test.

The strongest conclusion that can be drawn from Table 5 in terms of the impact of the NSLP is that protein is a more important source of food energy in USDA lunches than in alternative lunches. This difference is statistically significant for eleven of the twelve age-sex-income categories, but the magnitude of the difference tends to diminish with age. No important sex- or income-related patterns in the proportion of food energy provided by protein are apparent in the table.

Table 5 also provides evidence that carbohydrate is a less important source of food energy in USDA lunches than in alternative lunches. This difference is statistically significant for seven of the twelve age-sex-income categories. All but one of the categories for which the difference is significant are for students under 15 years of age. For most age-sex categories of students, the magnitude of the difference in the percent of food energy from carbohydrate in USDA lunches as opposed to alternative lunches is larger for the low-income subsample than for the full sample. Nevertheless, the difference is statistically significant for fewer of the low-income age-sex categories because of the small number of cases in the low-income subsample relative to the number in the full sample.

In summary, protein is a more important source of food energy in USDA school lunches than in alternative lunches, while the opposite is true for carbohydrate. There is no statistically significant evidence of differences between USDA lunches and alternative lunches in terms of the importance of fat as a source of food energy.

4. Sources of Food Energy--24 Hours

When the intake of food energy over 24 hours is disaggregated by source, as in Table 6, NSLP participants in seven of the twelve age-sex-income categories are found to have diets that are rich in protein relative to those of students who eat alternative lunches.[6] Thus, the positive effect of NSLP participation on the proportion of food energy obtained from protein, which we observed in our analysis of dietary intake at lunch, tends to persist over 24 hours. However, the diminution of this effect with age is more pronounced when dietary intake is measured over 24 hours rather than being restricted to the lunch period. Table 6 shows that the magnitude of the NSLP's positive 24-hour effect generally declines as successively older groups of students are considered and the frequency with which those effects are statistically significant also declines.

Carbohydrate accounts for about 3-5 percentage points less of the lunch intake of energy by students who eat a USDA lunch than by students who eat alternative lunches (refer to Table 5). When the contribution of carbohydrate to the intake of food energy over 24 hours is considered, as in Table 6, mean values for NSLP participants are generally 1-2 percentage points below those for students who eat alternative lunches. Fewer of the 24-hour differences are statistically significant than is true for the lunch-only differences (four significant 24-hour differences versus seven significant lunch-only differences). Only all-income and low-income male NSLP participants ages 5-10 years and all-income male and female

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[6]Standard deviations and thresholds for the second, third, and fourth quartiles of measures of the proportion of 24-hour food energy provided by fat, protein, and carbohydrate are provided in Tables A.10-A.12 (full sample) and B.10-B.12 (low-income subsample).

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TABLE 6

MEAN PROPORTION OF 24-HOUR FOOD ENERGY PROVIDED BY PROTEIN, FAT, AND CARBOHYDRATE
(Weighted Data)

Macronutrient/ Population		Students Ages 5-10 All Income	Students Ages 5-10 Low Income	Students Ages 11-14 All Income	Students Ages 11-14 Low Income	Students Ages 15-21 All Income	Students Ages 15-21 Low Income
Proportion of 24-Hour Energy from Protein							
Male:	NSLP Participant	15.4	15.9	15.3	14.8	15.0	14.9
	Non-USDA Lunch	13.7**	13.6**	14.0**	14.1	15.1	14.0
	No Lunch	(17.0)	(14.4)	15.2	(13.3)	14.6	(12.6)
Female:	NSLP Participant	15.0	14.8	15.0	14.9	14.9	15.1
	Non-USDA Lunch	13.5**	13.0**	14.1*	14.9	14.0	13.3*
	No Lunch	(12.0)	(11.8)	12.2**	(12.7*)	14.9	16.4
Proportion of 24-Hour Energy from Fat							
Male:	NSLP Participant	36.2	36.2	36.9	36.5	36.9	35.4
	Non-USDA Lunch	35.6	34.4	36.0	35.3	38.3	39.7*
	No Lunch	(38.5)	(34.5)	30.7**	(28.5**)	34.3	(35.4)
Female:	NSLP Participant	35.4	34.8	37.0	37.0	36.3	35.7
	Non-USDA Lunch	35.6	35.0	35.1**	36.0	37.1	38.8*
	No Lunch	(28.7)	(29.0)	34.0	(37.3)	35.5	36.2
Proportion of 24-Hour Energy from Carbohydrate							
Male:	NSLP Participant	48.4	48.0	47.9	48.7	48.1	49.7
	Non-USDA Lunch	50.7**	52.0*	49.9*	50.6	46.6	46.3
	No Lunch	(44.6)	(51.1)	54.1*	(58.2**)	51.1	(51.9)
Female:	NSLP Participant	49.6	50.4	48.0	48.2	48.4	49.2
	Non-USDA Lunch	50.9	52.0	50.1*	49.1	49.0	47.9
	No Lunch	(59.3*)	(59.2)	53.8*	(50.0)	49.6	47.4

SOURCE: The Sodium and Macronutrient Content of USDA School Lunches, 1988. Data are from the National Evaluation of School Nutrition Programs, fall 1980.

NOTE 1: The low-income subsample consists of students from families whose incomes do not exceed 185 percent of the poverty guidelines.

NOTE 2: Parentheses ( ) around a mean value indicate that it is based on 30 or fewer unweighted cases. Because of small sample sizes, these values and associated tests of significance may not be reliable.

*(**): Different from the mean intake of NSLP participants in the same age, sex, and income category at the .05(.01) level of significance, using a two-tailed t-test.

participants ages 11-14 years receive significantly less 24-hour food energy from carbohydrate than do students who eat other lunches.

An examination of Tables 5 and 6 reveals a general absence of statistically significant differences between students who eat USDA lunches and students who eat alternative lunches in terms of the proportion of food energy provided by fat--both at lunch and over 24 hours. Specifically, the percentage of 24-hour food energy derived from fat is significantly smaller for NSLP participants than for students who eat alternative lunches in two of the twelve age-sex-income categories and is significantly larger in one such category. There are no significant differences between NSLP participants and students who eat alternative lunches in the percentage of food energy at lunch derived from fat.

When contrasted with the findings presented in Table 5, the Table 6 findings further document the attenuation of the NSLP's dietary impacts as the measurement period is extended from the lunch period only to a 24-hour period. For the twelve age-sex-income categories, Table 5 shows eleven significant differences between NSLP participants and students who eat alternative lunches in the proportion of lunch food energy derived from protein. For carbohydrate there are seven significant differences and for fat there are none. In contrast, Table 6 shows only seven significant differences between these two groups in the proportion of 24-hour food energy derived from protein, four significant differences for carbohydrate, and three for fat. As previously stated, we believe that this apparent attenuation of NSLP effects as the duration of the measurement period is extended is due to offsetting dietary intakes at meals other than lunch.

Our analysis file includes so few lunch skippers that it is difficult to draw conclusions from Table 6 regarding the 24-hour effects of eating a USDA school lunch as opposed to eating no lunch at all on sources of food energy. Only for selected categories of students over 10 years of age does the file include sufficient numbers of lunch skippers (i.e., more than 30) for results of statistical tests to be reliable. For male students ages 11-14 years in the full (all-income) sample, Table 6 shows that NSLP participants receive more 24-hour food energy from fat and less from carbohydrate than do lunch skippers. Among all-income females in the same age bracket, protein is a more important source of food energy over 24 hours and carbohydrate is a less important source for NSLP participants than for lunch skippers. For all sex-income categories of students ages 15-21 years, with the exception of low-income males, our analysis file provides sufficient numbers of lunch skippers for results of statistical tests to be reliable. For students in these categories, Table 6 shows no significant differences in macronutrient sources of 24-hour food energy between NSLP participants and lunch skippers.

F. SUMMARY AND CONCLUSIONS

The strongest finding from this analysis is that the lunch intake of protein by students ages 5-10 years and 11-15 years who participate in the NSLP is greater than that of students who eat alternative lunches. This finding is invariant with respect to sex or family income and also holds true regardless of whether a measure of protein intake in grams, or a measure of the proportion of food energy attributable to protein, is used.

For students ages 15-21 years in three of four sex-income categories, the analysis also shows positive effects of eating a USDA school

lunch versus an alternative lunch on the proportion of lunch food energy derived from protein. However, with the exception of low-income males, these findings are not reinforced by findings of positive NSLP effects on grams of protein intake at lunch.

1. NLSP Effects on the Quantitative Intake of Food Energy, Macronutrients, and Sodium

When quantitative dietary intake (i.e., intake measured in grams, milligrams, or kilocalories) at lunch is analyzed, the NSLP is found to have its strongest effects on female students ages 5-10 years and 11-14 years. Female NSLP participants ages 5-10 years have lunch intakes of food energy, macronutrients (other than protein), and sodium that are less than or equal to those of their counterparts who eat alternative lunches. Conversely, among females 11-14 years, the lunch intakes of these dietary components by NSLP participants equal or exceed those of students who eat alternative lunches. Among male students of all ages, there are virtually no differences in quantitative dietary intakes (with the exception of protein) at lunch between NSLP participants and students who eat alternative lunches. Also, among older students (ages 15-21 years) of either sex, very few effects of NSLP participation on quantitative lunch intakes of energy, macronutrients (including protein), and sodium are observed.

Extension of the period of analysis to a full 24 hours reveals an apparent attenuation over time of NSLP effects on quantitative dietary intake. Among students ages 5-10 years and 11-14 years, positive differentials in protein intake between those who eat USDA lunches and those who eat alternative lunches continue to be observed in some sex-income

categories; however, virtually, no other significant 24-hour effects of eating a USDA lunch versus an alternative lunch are observed.

These findings regarding the effects on the intake of food energy, macronutrients, and sodium of eating a USDA school lunch versus an alternative lunch should be considered in light of the findings of Wellisch et al. (volumes 1 and 2, 1983) from the original analysis of the NESNP-1 data. That study used regression models to analyze the intake of food energy, protein, and ten micronutrients. For the full sample of students, it found that NSLP participants have greater lunch intakes of food energy, protein, and eight micronutrients than do students who eat other lunches. For the same sample, it also found positive NSLP effects on the 24-hour intake of food energy, protein and seven micronutrients. Somewhat fewer positive impacts of the program were found for the low-income subsample.

The only apparent discrepancies between the findings from the two studies are with respect to the effects of USDA school lunch versus other lunches on energy intake (at lunch and over 24 hours) as estimated on the full NESNP-1 sample. We find no programmatic effects, whereas Wellisch et al. found positive effects. These differences in findings may be due to differences in the analysis approaches--we examined simple differences in mean intake values, whereas Wellisch et al. examined regression-adjusted intake differences.

2. A Comparison of 24-Hour Quantitative Dietary Intake Between NSLP Participants and Lunch Skippers

The 24-hour quantitative intakes of food energy, macronutrients, and sodium by USDA school lunch eaters who participated in the NESNP-1 survey tend to be much larger in magnitude than those of lunch skippers who

participated in the survey. However, there are so few lunch skippers in the NESNP-1 data base that we have little confidence in these findings.

3. NSLP Effects on Sources of Food Energy

When the proportion of lunch food energy contributed by each macronutrient is analyzed, protein is found to be a more important source of food energy for students who eat USDA lunches than for students who eat alternative lunches. The opposite is true of carbohydrate for most age-sex-income categories. For students under 15 years of age, these effects of the NSLP tend to persist when the period of analysis is expanded to a full 24 hours.

The small number of observations on lunch skippers in many of the study's age-sex-income categories precludes a broad-based comparison of differences in macronutrient sources of 24-hour food energy between NSLP participants and students who eat no lunch.

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APPENDIX A

SUPPLEMENTAL TABLES FOR THE FULL (ALL-INCOME) SAMPLE OF STUDENTS

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TABLE A.1

DESCRIPTIVE STATISTICS ON THE LUNCH INTAKE OF FOOD ENERGY, PROTEIN, FAT, CARBOHYDRATE, AND SODIUM--STUDENTS AGES 5-10 YEARS
(Weighted Data, Full Sample)

Dietary Item/ Population		Mean	Standard Deviation	First Quartile	Median	Third Quartile
Food Energy (Kcal)						
Male:	NSLP Participant	595	304	413	549	746
	Non-USDA Lunch	636*	265	437	608	812
Female:	NSLP Participant	532	221	381	506	654
	Non-USDA Lunch	577*	256	400	554	753
Protein (gm)						
Male:	NSLP Participant	25.5	12.9	16.6	23.1	31.9
	Non-USDA Lunch	19.9**	10.0	13.2	18.2	24.4
Female:	NSLP Participant	22.2	10.6	14.3	20.5	27.6
	Non-USDA Lunch	19.2**	11.2	11.8	17.3	25.8
Fat (gm)						
Male:	NSLP Participant	26.2	15.7	16.1	23.9	32.8
	Non-USDA Lunch	28.6	16.0	16.9	25.9	35.9
Female:	NSLP Participant	22.8	11.6	14.5	21.1	29.2
	Non-USDA Lunch	25.6*	15.6	14.7	24.2	32.9
Carbohydrate (gm)						
Male:	NSLP Participant	65.8	40.1	44.7	60.8	81.7
	Non-USDA Lunch	78.0**	33.6	52.3	74.7	101.6
Female:	NSLP Participant	60.9	30.2	40.6	57.1	75.1
	Non-USDA Lunch	69.8**	32.6	44.7	64.9	93.4
Sodium (mg)[1]						
Male:	NSLP Participant	870	746	463	710	1070
	Non-USDA Lunch	921	580	542	743	1143
Female:	NSLP Participant	722	515	391	624	920
	Non-USDA Lunch	907**	604	473	808	1206

SOURCE: The Sodium and Macronutrient Content of USDA School Lunches, 1988. Data are from the National Evaluation of School Nutrition Programs, fall 1980.

[1]Does not include sodium obtained through the discretionary use of table salt.

*(**): Different from the mean intake of NSLP participants at the .05(.01) level of significance, using a two-tailed t-test.

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TABLE A.2

DESCRIPTIVE STATISTICS ON THE LUNCH INTAKE OF FOOD ENERGY, PROTEIN, FAT, CARBOHYDRATE, AND SODIUM--STUDENTS AGES 11-14 YEARS
(Weighted Data, Full Sample)

Dietary Item/ Population		Mean	Standard Deviation	First Quartile	Median	Third Quartile
Food Energy (Kcal)						
Male:	NSLP Participant	758	318	526	724	943
	Non-USDA Lunch	718	333	480	717	901
Female:	NSLP Participant	613	364	403	561	770
	Non-USDA Lunch	518**	243	361	510	658
Protein (gm)						
Male:	NSLP Participant	30.4	13.4	20.7	28.6	37.6
	Non-USDA Lunch	23.7**	14.6	13.4	22.6	30.6
Female:	NSLP Participant	25.2	13.9	15.2	22.6	32.0
	Non-USDA Lunch	17.8**	12.0	8.4	16.6	22.9
Fat (gm)						
Male:	NSLP Participant	33.6	17.1	20.4	31.9	43.6
	Non-USDA Lunch	31.8	17.8	20.0	30.0	40.9
Female:	NSLP Participant	27.9	17.7	15.7	23.8	36.2
	Non-USDA Lunch	22.7**	13.1	13.7	21.0	29.8
Carbohydrate (gm)						
Male:	NSLP Participant	84.9	42.2	53.5	80.2	107.6
	Non-USDA Lunch	86.3	41.7	59.9	81.8	113.3
Female:	NSLP Participant	66.7	49.4	40.5	57.8	84.1
	Non-USDA Lunch	62.1	33.0	35.0	62.0	81.4
Sodium (mg)[1]						
Male:	NSLP Participant	1014	621	561	890	1383
	Non-USDA Lunch	1024	745	555	857	1333
Female:	NSLP Participant	816	641	427	699	1010
	Non-USDA Lunch	919	1064	348	695	1056

SOURCE: The Sodium and Macronutrient Content of USDA School Lunches, 1988. Data are from the National Evaluation of School Nutrition Programs, fall 1980.

[1]Does not include sodium obtained through the discretionary use of table salt.

*(**): Different from the mean intake of NSLP participants at the .05(.01) level of significance, using a two-tailed t-test.

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TABLE A.3

DESCRIPTIVE STATISTICS ON THE LUNCH INTAKE OF FOOD ENERGY, PROTEIN, FAT, CARBOHYDRATE, AND SODIUM--STUDENTS AGES 15-21 YEARS
(Weighted Data, Full Sample)

Dietary Item/ Population		Mean	Standard Deviation	First Quartile	Median	Third Quartile
Food Energy (Kcal)						
Male:	NSLP Participant	907	453	631	852	1070
	Non-USDA Lunch	834	480	461	671	1120
Female:	NSLP Participant	593	255	438	552	721
	Non-USDA Lunch	571	416	269	553	732
Protein (gm)						
Male:	NSLP Participant	36.3	17.8	24.5	32.8	44.0
	Non-USDA Lunch	31.2	23.9	13.0	24.0	44.5
Female:	NSLP Participant	23.3	12.5	14.5	21.1	28.2
	Non-USDA Lunch	21.2	17.2	7.9	17.9	30.7
Fat (gm)						
Male:	NSLP Participant	38.6	22.0	24.2	34.7	46.9
	Non-USDA Lunch	37.8	27.1	18.7	28.1	53.3
Female:	NSLP Participant	27.4	16.4	18.2	23.3	34.7
	Non-USDA Lunch	25.3	23.8	10.0	19.0	33.3
Carbohydrate (gm)						
Male:	NSLP Participant	105.4	58.6	70.5	95.4	129.8
	Non-USDA Lunch	93.7	55.2	56.5	83.6	122.6
Female:	NSLP Participant	64.7	30.4	45.5	59.8	78.0
	Non-USDA Lunch	66.3	48.0	32.5	60.3	81.7
Sodium (mg)[1]						
Male:	NSLP Participant	1140	769	619	917	1442
	Non-USDA Lunch	1290	1049	528	957	1666
Female:	NSLP Participant	832	559	456	728	1056
	Non-USDA Lunch	782	835	165	502	1079

SOURCE: The Sodium and Macronutrient Content of USDA School Lunches, 1988. Data are from the National Evaluation of School Nutrition Programs, fall 1980.

[1]Does not include sodium obtained through the discretionary use of table salt.

*(**): Different from the mean intake of NSLP participants at the .05(.01) level of significance, using a two-tailed t-test.

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TABLE A.4

DESCRIPTIVE STATISTICS ON THE 24-HOUR INTAKE OF FOOD ENERGY, PROTEIN, FAT, CARBOHYDRATE, AND SODIUM--STUDENTS AGES 5-10 YEARS
(Weighted Data, Full Sample)

Dietary Item/ Population		Mean	Standard Deviation	First Quartile	Median	Third Quartile
Food Energy (Kcal)						
Male:	NSLP Participant	2052	754	1554	1939	2444
	Non-USDA Lunch	2017	649	1543	1949	2330
	No Lunch	1457	594	1310	1310	1463
Female:	NSLP Participant	1775	583	1365	1692	2126
	Non-USDA Lunch	1826	568	1437	1798	2249
	No Lunch	1244	449	1200	1200	1263
Protein (gm)						
Male:	NSLP Participant	78	30	56	75	96
	Non-USDA Lunch	70**	27	52	65	80
	No Lunch	51	22	39	46	57
Female:	NSLP Participant	66	27	48	62	79
	Non-USDA Lunch	62	24	46	60	76
	No Lunch	39	24	28	28	56
Fat (gm)						
Male:	NSLP Participant	84	37	59	76	103
	Non-USDA Lunch	82	31	58	81	100
	No Lunch	53	30	41	43	53
Female:	NSLP Participant	71	30	50	66	87
	Non-USDA Lunch	74	30	52	69	96
	No Lunch	41	22	33	33	51
Carbohydrate (gm)						
Male:	NSLP Participant	251	102	179	234	299
	Non-USDA Lunch	259	95	206	252	296
	No Lunch	149*	98	79	79	218
Female:	NSLP Participant	222	82	166	208	270
	Non-USDA Lunch	233	80	177	233	289
	No Lunch	182	57	162	203	203
Sodium (mg)[1]						
Male:	NSLP Participant	2721	1451	1800	2392	3330
	Non-USDA Lunch	2644	1183	1857	2380	3049
	No Lunch	1493	989	652	1150	1931
Female:	NSLP Participant	2266	1193	1529	1996	2840
	Non-USDA Lunch	2377	1099	1543	2166	2917
	No Lunch	1413	965	1168	1168	1526

SOURCE: The Sodium and Macronutrient Content of USDA School Lunches, 1988. Data are from the National Evaluation of School Nutrition Programs, fall 1980.

[1]Does not include sodium obtained through the discretionary use of table salt.

*(**): Different from the mean intake of NSLP participants at the .05(.01) level of significance, using a two-tailed t-test.

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TABLE A.5

DESCRIPTIVE STATISTICS ON THE 24-HOUR INTAKE OF FOOD ENERGY, PROTEIN, FAT, CARBOHYDRATE, AND SODIUM--STUDENTS AGES 11-14 YEARS
(Weighted Data, Full Sample)

Dietary Item/ Population		Mean	Standard Deviation	First Quartile	Median	Third Quartile
Food Energy (Kcal)						
Male:	NSLP Participant	2512	883	1898	2411	3021
	Non-USDA Lunch	2488	932	1858	2317	2896
	No Lunch	1902**	747	1483	1780	2302
Female:	NSLP Participant	1890	748	1335	1763	2268
	Non-USDA Lunch	1854	685	1408	1773	2139
	No Lunch	1176**	661	812	1060	1476
Protein (gm)						
Male:	NSLP Participant	95	38	69	89	117
	Non-USDA Lunch	87*	34	65	82	105
	No Lunch	71**	31	39	69	100
Female:	NSLP Participant	70	29	49	66	89
	Non-USDA Lunch	66	28	46	61	83
	No Lunch	39**	33	18	30	51
Fat (gm)						
Male:	NSLP Participant	105	45	73	98	130
	Non-USDA Lunch	101	45	73	95	125
	No Lunch	69**	40	41	63	100
Female:	NSLP Participant	79	36	54	72	97
	Non-USDA Lunch	74	32	53	71	91
	No Lunch	47**	33	28	46	62
Carbohydrate (gm)						
Male:	NSLP Participant	303	116	220	295	361
	Non-USDA Lunch	315	131	229	288	390
	No Lunch	254*	97	198	260	286
Female:	NSLP Participant	229	101	157	214	275
	Non-USDA Lunch	237	101	175	224	275
	No Lunch	153**	78	88	142	192
Sodium (mg)[1]						
Male:	NSLP Participant	3297	1765	2125	2914	4272
	Non-USDA Lunch	3317	1801	2098	3029	4185
	No Lunch	2529	1824	1476	2133	3033
Female:	NSLP Participant	2409	1264	1533	2129	2964
	Non-USDA Lunch	2469	1432	1459	2192	3102
	No Lunch	1370**	890	674	1462	1699

SOURCE: The Sodium and Macronutrient Content of USDA School Lunches, 1988. Data are from the National Evaluation of School Nutrition Programs, fall 1980.

[1]Does not include sodium obtained through the discretionary use of table salt.

*(**): Different from the mean intake of NSLP participants at the .05(.01) level of significance, using a two-tailed t-test.

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TABLE A.6

DESCRIPTIVE STATISTICS ON THE 24-HOUR INTAKE OF FOOD ENERGY, PROTEIN, FAT, CARBOHYDRATE, AND SODIUM--STUDENTS AGES 15-21 YEARS
(Weighted Data, Full Sample)

Dietary Item/ Population		Mean	Standard Deviation	First Quartile	Median	Third Quartile
Food Energy (Kcal)						
Male:	NSLP Participant	3122	1259	2265	2955	3669
	Non-USDA Lunch	3146	1515	2144	2946	3720
	No Lunch	2449*	1058	1882	2255	2945
Female:	NSLP Participant	1871	675	1384	1830	2275
	Non-USDA Lunch	1825	740	1283	1850	2161
	No Lunch	1383**	677	916	1268	1832
Protein (gm)						
Male:	NSLP Participant	116	53	79	108	141
	Non-USDA Lunch	119	61	79	110	144
	No Lunch	87**	45	47	83	106
Female:	NSLP Participant	69	28	49	65	83
	Non-USDA Lunch	64	32	41	60	83
	No Lunch	49**	24	28	49	62
Fat (gm)						
Male:	NSLP Participant	131	65	91	119	162
	Non-USDA Lunch	136	72	90	120	171
	No Lunch	94**	49	69	94	111
Female:	NSLP Participant	78	34	54	75	101
	Non-USDA Lunch	78	41	48	75	98
	No Lunch	57**	35	31	51	86
Carbohydrate (gm)						
Male:	NSLP Participant	374	154	266	360	444
	Non-USDA Lunch	365	184	246	326	441
	No Lunch	320	153	223	293	429
Female:	NSLP Participant	229	90	167	217	277
	Non-USDA Lunch	223	98	164	218	260
	No Lunch	168**	81	106	168	235
Sodium (mg)[1]						
Male:	NSLP Participant	4029	2187	2536	3399	5136
	Non-USDA Lunch	4134	2430	2603	3562	5259
	No Lunch	3094*	1616	2365	2894	4447
Female:	NSLP Participant	2414	1194	1579	2303	3005
	Non-USDA Lunch	2395	1341	1411	2316	2941
	No Lunch	1495**	933	956	1284	1888

SOURCE: The Sodium and Macronutrient Content of USDA School Lunches, 1988. Data are from the National Evaluation of School Nutrition Programs, fall 1980.

[1]Does not include sodium obtained through the discretionary use of table salt.

*(**): Different from the mean intake of NSLP participants at the .05(.01) level of significance, using a two-tailed t-test.

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TABLE A.7

DESCRIPTIVE STATISTICS ON THE PROPORTION OF LUNCH FOOD ENERGY PROVIDED BY PROTEIN, FAT, AND CARBOHYDRATE--STUDENTS AGES 5-10 YEARS
(Weighted Data, Full Sample)

Macronutrient/ Population		Mean	Standard Deviation	First Quartile	Median	Third Quartile
Proportion of Lunch Energy from Protein						
Male:	NSLP Participant	17.4	5.9	13.8	16.6	19.8
	Non-USDA Lunch	12.5**	4.2	9.9	11.8	15.3
Female:	NSLP Participant	16.9	6.0	13.1	15.8	19.4
	Non-USDA Lunch	13.7**	7.4	9.5	12.4	16.4
Proportion of Lunch Energy from Fat						
Male:	NSLP Participant	38.4	8.6	32.7	38.4	44.2
	Non-USDA Lunch	38.4	10.5	31.8	38.3	45.4
Female:	NSLP Participant	37.5	9.1	31.9	37.9	43.7
	Non-USDA Lunch	37.1	12.3	29.3	36.6	45.1
Proportion of Lunch Energy from Carbohydrate						
Male:	NSLP Participant	44.2	10.5	37.2	44.7	51.2
	Non-USDA Lunch	49.1**	11.8	40.8	50.4	57.1
Female:	NSLP Participant	45.6	11.5	37.7	45.7	52.6
	Non-USDA Lunch	49.2**	15.0	38.3	48.5	60.6

SOURCE: The Sodium and Macronutrient Content of USDA School Lunches, 1988. Data are from the National Evaluation of School Nutrition Programs, fall 1980.

*(**): Different from the mean intake of NSLP participants at the .05(.01) level of significance, using a two-tailed t-test.

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TABLE A.8

DESCRIPTIVE STATISTICS ON THE PROPORTION OF LUNCH FOOD ENERGY PROVIDED BY PROTEIN, FAT, AND CARBOHYDRATE--STUDENTS AGES 11-14 YEARS
(Weighted Data, Full Sample)

Macronutrient/ Population		Mean	Standard Deviation	First Quartile	Median	Third Quartile
Proportion of Lunch Energy from Protein						
Male:	NSLP Participant	16.6	5.1	12.8	15.8	19.3
	Non-USDA Lunch	13.5**	7.5	9.6	12.0	16.3
Female:	NSLP Participant	16.7	5.4	13.2	16.0	19.5
	Non-USDA Lunch	13.4**	6.7	9.0	12.1	16.2
Proportion of Lunch Energy from Fat						
Male:	NSLP Participant	38.8	9.0	33.2	39.1	44.1
	Non-USDA Lunch	38.2	10.2	32.3	38.7	45.6
Female:	NSLP Participant	39.9	8.9	34.4	39.4	45.6
	Non-USDA Lunch	38.3	12.2	31.9	37.5	45.2
Proportion of Lunch Energy from Carbohydrate						
Male:	NSLP Participant	44.7	10.4	39.0	44.6	51.2
	Non-USDA Lunch	48.3**	13.0	40.1	47.4	55.3
Female:	NSLP Participant	43.4	10.7	36.9	43.5	50.6
	Non-USDA Lunch	48.3**	14.5	38.9	49.0	56.9

SOURCE: The Sodium and Macronutrient Content of USDA School Lunches, 1988. Data are from the National Evaluation of School Nutrition Programs, fall 1980.

*(**): Different from the mean intake of NSLP participants at the .05(.01) level of significance, using a two-tailed t-test.

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TABLE A.9

DESCRIPTIVE STATISTICS ON THE PROPORTION OF LUNCH FOOD ENERGY PROVIDED BY PROTEIN, FAT, AND CARBOHYDRATE--STUDENTS AGES 15-21 YEARS
(Weighted Data, Full Sample)

Macronutrient/ Population		Mean	Standard Deviation	First Quartile	Median	Third Quartile
Proportion of Lunch Energy from Protein						
Male:	NSLP Participant	16.6	5.5	12.6	15.6	19.2
	Non-USDA Lunch	14.1**	6.7	9.8	12.7	16.9
Female:	NSLP Participant	16.0	6.4	12.5	15.3	19.2
	Non-USDA Lunch	14.3	7.7	9.2	13.4	17.7
Proportion of Lunch Energy from Fat						
Male:	NSLP Participant	37.7	8.4	31.4	38.0	42.6
	Non-USDA Lunch	38.8	12.2	32.3	40.8	47.3
Female:	NSLP Participant	40.0	10.8	34.4	40.2	45.4
	Non-USDA Lunch	37.0	14.2	26.6	36.1	47.2
Proportion of Lunch Energy from Carbohydrate						
Male:	NSLP Participant	45.7	10.6	39.1	45.8	52.5
	Non-USDA Lunch	47.1	14.6	36.9	46.4	55.7
Female:	NSLP Participant	44.0	11.6	36.2	44.1	50.5
	Non-USDA Lunch	48.7*	16.3	39.3	47.0	56.1

SOURCE: The Sodium and Macronutrient Content of USDA School Lunches, 1988. Data are from the National Evaluation of School Nutrition Programs, fall 1980.

*(**): Different from the mean intake of NSLP participants at the .05(.01) level of significance, using a two-tailed t-test.

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TABLE A.10

DESCRIPTIVE STATISTICS ON THE PROPORTION OF 24-HOUR FOOD ENERGY PROVIDED BY PROTEIN, FAT, AND CARBOHYDRATE--STUDENTS AGES 5-10 YEARS
(Weighted Data, Full Sample)

Macronutrient/ Population		Mean	Standard Deviation	First Quartile	Median	Third Quartile
Proportion of 24-Hour Energy from Protein						
Male:	NSLP Participant	15.4	3.8	12.5	15.1	17.7
	Non-USDA Lunch	13.7**	3.5	11.8	13.5	15.2
	No Lunch	17.0	4.1	14.0	18.3	20.7
Female:	NSLP Participant	15.0	4.0	12.2	14.5	17.0
	Non-USDA Lunch	13.5**	3.4	11.2	13.2	16.0
	No Lunch	12.0	4.7	9.0	9.0	17.2
Proportion of 24-Hour Energy from Fat						
Male:	NSLP Participant	36.2	6.5	32.1	35.7	40.2
	Non-USDA Lunch	35.6	6.7	31.8	35.0	39.4
	No Lunch	38.5	7.1	34.1	42.8	43.8
Female:	NSLP Participant	35.4	6.8	31.1	34.9	39.5
	Non-USDA Lunch	35.6	7.8	30.1	35.3	40.7
	No Lunch	28.7	7.1	24.5	24.5	34.3
Proportion of 24-Hour Energy from Carbohydrate						
Male:	NSLP Participant	48.4	8.2	43.0	48.5	54.0
	Non-USDA Lunch	50.7**	8.5	45.9	51.6	55.6
	No Lunch	44.6	9.8	35.5	40.3	52.0
Female:	NSLP Participant	49.6	8.4	43.9	49.8	55.4
	Non-USDA Lunch	50.9	9.5	45.5	51.8	57.8
	No Lunch	59.3*	10.4	53.7	66.5	66.5

SOURCE: The Sodium and Macronutrient Content of USDA School Lunches, 1988. Data are from the National Evaluation of School Nutrition Programs, fall 1980.

*(**): Different from the mean intake of NSLP participants at the .05(.01) level of significance, using a two-tailed t-test.

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TABLE A.11

DESCRIPTIVE STATISTICS ON THE PROPORTION OF 24-HOUR FOOD ENERGY PROVIDED BY PROTEIN, FAT, AND CARBOHYDRATE--STUDENTS AGES 11-14 YEARS
(Weighted Data, Full Sample)

Macronutrient/ Population		Mean	Standard Deviation	First Quartile	Median	Third Quartile
Proportion of 24-Hour Energy from Protein						
Male:	NSLP Participant	15.3	3.9	12.4	14.8	17.7
	Non-USDA Lunch	14.0**	3.7	11.4	13.8	16.0
	No Lunch	15.2	5.3	10.4	14.1	17.8
Female:	NSLP Participant	15.0	4.0	12.1	14.8	17.3
	Non-USDA Lunch	14.1*	3.7	11.6	13.5	16.5
	No Lunch	12.2**	4.6	9.0	11.8	15.2
Proportion of 24-Hour Energy from Fat						
Male:	NSLP Participant	36.9	6.7	32.3	36.9	41.2
	Non-USDA Lunch	36.0	7.2	30.6	36.1	40.6
	No Lunch	30.7**	8.9	25.5	31.9	38.9
Female:	NSLP Participant	37.0	6.7	32.6	36.9	41.4
	Non-USDA Lunch	35.1**	7.0	30.2	35.7	39.3
	No Lunch	34.0	12.3	26.9	35.1	42.4
Proportion of 24-Hour Energy from Carbohydrate						
Male:	NSLP Participant	47.9	8.1	42.9	48.3	53.9
	Non-USDA Lunch	49.9*	8.6	42.9	49.5	55.8
	No Lunch	54.1*	11.7	45.2	53.0	63.6
Female:	NSLP Participant	48.0	8.0	42.8	47.7	52.9
	Non-USDA Lunch	50.1*	8.9	45.2	50.4	56.2
	No Lunch	53.8*	14.4	43.1	53.1	61.3

SOURCE: The Sodium and Macronutrient Content of USDA School Lunches, 1988. Data are from the National Evaluation of School Nutrition Programs, fall 1980.

*(**): Different from the mean intake of NSLP participants at the .05(.01) level of significance, using a two-tailed t-test.

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TABLE A.12

DESCRIPTIVE STATISTICS ON THE PROPORTION OF 24-HOUR FOOD ENERGY PROVIDED BY PROTEIN, FAT, AND CARBOHYDRATE--STUDENTS AGES 15-21 YEARS
(Weighted Data, Full Sample)

Macronutrient/ Population		Mean	Standard Deviation	First Quartile	Median	Third Quartile
Proportion of 24-Hour Energy from Protein						
Male:	NSLP Participant	15.0	4.0	12.0	14.7	17.5
	Non-USDA Lunch	15.1	3.9	12.3	14.7	17.8
	No Lunch	14.6	5.7	11.4	12.9	17.6
Female:	NSLP Participant	14.9	4.1	12.0	14.2	17.3
	Non-USDA Lunch	14.0	4.8	11.0	13.7	16.0
	No Lunch	14.9	5.4	10.9	14.4	18.1
Proportion of 24-Hour Energy from Fat						
Male:	NSLP Participant	36.9	7.3	32.0	37.2	41.9
	Non-USDA Lunch	38.3	7.6	33.5	39.4	43.4
	No Lunch	34.3	10.5	27.4	33.6	41.3
Female:	NSLP Participant	36.3	7.3	32.0	36.6	40.7
	Non-USDA Lunch	37.1	8.9	32.1	37.5	42.0
	No Lunch	35.5	9.6	27.7	37.5	42.0
Proportion of 24-Hour Energy from Carbohydrate						
Male:	NSLP Participant	48.1	8.9	42.0	48.1	54.5
	Non-USDA Lunch	46.6	9.4	41.0	46.5	52.0
	No Lunch	51.1	12.4	45.0	52.2	57.6
Female:	NSLP Participant	48.4	8.4	43.2	48.7	54.0
	Non-USDA Lunch	49.0	11.1	44.0	48.3	54.7
	No Lunch	49.6	10.6	42.1	47.2	57.5

SOURCE: The Sodium and Macronutrient Content of USDA School Lunches, 1988. Data are from the National Evaluation of School Nutrition Programs, fall 1980.

*(**): Different from the mean intake of NSLP participants at the .05(.01) level of significance, using a two-tailed t-test.

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APPENDIX B

SUPPLEMENTAL TABLES FOR THE LOW-INCOME SUBSAMPLE OF STUDENTS

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TABLE B.1

DESCRIPTIVE STATISTICS ON THE LUNCH INTAKE OF FOOD ENERGY, PROTEIN, FAT, CARBOHYDRATE, AND SODIUM--STUDENTS ELIGIBLE FOR FREE OR REDUCED-PRICE LUNCHES, AGES 5-10 YEARS
(Weighted Data, Low-Income Subsample)

Dietary Item/ Population		Mean	Standard Deviation	First Quartile	Median	Third Quartile
Food Energy (Kcal)						
Male:	NSLP Participant	589	251	401	561	768
	Non-USDA Lunch	543	246	316	500	708
Female:	NSLP Participant	540	228	385	511	670
	Non-USDA Lunch	528	261	305	522	737
Protein (gm)						
Male:	NSLP Participant	26.5	13.7	16.6	24.5	33.9
	Non-USDA Lunch	17.2**	9.1	10.9	16.4	20.8
Female:	NSLP Participant	22.7	10.8	14.5	21.2	29.8
	Non-USDA Lunch	16.9**	9.4	8.5	14.3	23.3
Fat (gm)						
Male:	NSLP Participant	26.0	13.9	15.8	24.7	33.2
	Non-USDA Lunch	24.4	13.7	14.7	22.2	28.5
Female:	NSLP Participant	22.7	11.5	13.7	21.5	29.8
	Non-USDA Lunch	21.7	12.5	11.3	21.4	30.8
Carbohydrate (gm)						
Male:	NSLP Participant	63.8	28.5	44.7	60.0	80.4
	Non-USDA Lunch	65.9	33.7	43.9	59.2	95.7
Female:	NSLP Participant	62.7	32.6	40.5	57.2	79.3
	Non-USDA Lunch	68.2	38.8	37.2	59.3	104.7
Sodium (mg)[1]						
Male:	NSLP Participant	912	932	465	687	1052
	Non-USDA Lunch	787	386	551	646	936
Female:	NSLP Participant	721	546	379	646	922
	Non-USDA Lunch	899*	488	552	836	1152

SOURCE: The Sodium and Macronutrient Content of USDA School Lunches, 1988. Data are from the National Evaluation of School Nutrition Programs, fall 1980.

NOTE: The low-income subsample consists of students from families whose incomes do not exceed 185 percent of the proverty guidelines.

[1]Does not include sodium obtained through the discretionary use of table salt.

*(**): Different from the mean intake of NSLP participants at the .05(.01) level of significance, using a two-tailed t-test.

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TABLE B.2

DESCRIPTIVE STATISTICS ON THE LUNCH INTAKE OF FOOD ENERGY, PROTEIN, FAT, CARBOHYDRATE, AND SODIUM--STUDENTS ELIGIBLE FOR FREE OR REDUCED-PRICE LUNCHES, AGES 11-14 YEARS
(Weighted Data, Low-Income Subsample)

Dietary Item/ Population		Mean	Standard Deviation	First Quartile	Median	Third Quartile
Food Energy (Kcal)						
Male:	NSLP Participant	710	285	501	698	911
	Non-USDA Lunch	632	354	388	558	799
Female:	NSLP Participant	586	293	380	513	753
	Non-USDA Lunch	499*	265	285	478	667
Protein (gm)						
Male:	NSLP Participant	29.7	14.1	19.1	26.7	38.9
	Non-USDA Lunch	20.6**	15.5	10.6	18.3	25.5
Female:	NSLP Participant	24.4	13.8	14.3	20.7	31.6
	Non-USDA Lunch	18.0**	13.3	7.6	17.8	25.3
Fat (gm)						
Male:	NSLP Participant	31.6	16.7	19.4	29.5	41.3
	Non-USDA Lunch	28.6	20.5	13.1	26.2	41.6
Female:	NSLP Participant	26.7	16.1	15.2	22.6	32.6
	Non-USDA Lunch	21.4*	13.3	11.1	19.2	29.6
Carbohydrate (gm)						
Male:	NSLP Participant	78.0	37.0	52.1	74.4	98.4
	Non-USDA Lunch	73.9	32.8	48.0	63.2	95.8
Female:	NSLP Participant	63.2	34.1	38.8	55.4	78.6
	Non-USDA Lunch	60.0	36.4	25.9	57.8	89.0
Sodium (mg)[1]						
Male:	NSLP Participant	977	590	570	890	1239
	Non-USDA Lunch	1165	1006	576	862	1515
Female:	NSLP Participant	757	535	421	640	950
	Non-USDA Lunch	992	925	348	690	1596

SOURCE: The Sodium and Macronutrient Content of USDA School Lunches, 1988. Data are from the National Evaluation of School Nutrition Programs, fall 1980.

NOTE: The low-income subsample consists of students from families whose incomes do not exceed 185 percent of the proverty guidelines.

[1]Does not include sodium obtained through the discretionary use of table salt.

*(**): Different from the mean intake of NSLP participants at the .05(.01) level of significance, using a two-tailed t-test.

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TABLE B.3

DESCRIPTIVE STATISTICS ON THE LUNCH INTAKE OF FOOD ENERGY, PROTEIN, FAT, CARBOHYDRATE, AND SODIUM--STUDENTS ELIGIBLE FOR FREE OR REDUCED-PRICE LUNCHES, AGES 15-21 YEARS
(Weighted Data, Low-Income Subsample)

Dietary Item/ Population		Mean	Standard Deviation	First Quartile	Median	Third Quartile
Food Energy (Kcal)						
Male:	NSLP Participant	849	549	533	758	1014
	Non-USDA Lunch	764	322	566	739	1025
Female:	NSLP Participant	559	226	403	524	674
	Non-USDA Lunch	708	369	446	694	835
Protein (gm)						
Male:	NSLP Participant	34.6	19.4	23.3	29.4	42.0
	Non-USDA Lunch	26.7*	14.4	16.6	27.9	32.4
Female:	NSLP Participant	23.1	10.6	15.7	22.3	27.7
	Non-USDA Lunch	23.5	16.4	11.4	22.6	35.8
Fat (gm)						
Male:	NSLP Participant	36.4	26.2	23.2	32.8	42.6
	Non-USDA Lunch	34.9	20.1	22.9	28.1	53.3
Female:	NSLP Participant	23.8	12.6	16.4	20.5	29.4
	Non-USDA Lunch	31.3	19.6	20.0	27.9	44.4
Carbohydrate (gm)						
Male:	NSLP Participant	97.1	66.7	57.0	83.6	114.3
	Non-USDA Lunch	87.7	39.4	57.7	89.6	107.4
Female:	NSLP Participant	64.1	31.3	42.5	54.5	85.3
	Non-USDA Lunch	84.8*	45.2	46.9	78.5	120.2
Sodium (mg)[1]						
Male:	NSLP Participant	1060	692	614	891	1344
	Non-USDA Lunch	1211	747	709	1184	1639
Female:	NSLP Participant	788	501	403	770	942
	Non-USDA Lunch	1011	876	433	775	1346

SOURCE: The Sodium and Macronutrient Content of USDA School Lunches, 1988. Data are from the National Evaluation of School Nutrition Programs, fall 1980.

NOTE: The low-income subsample consists of students from families whose incomes do not exceed 185 percent of the proverty guidelines.

[1]Does not include sodium obtained through the discretionary use of table salt.

*(**): Different from the mean intake of NSLP participants at the .05(.01) level of significance, using a two-tailed t-test.

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TABLE B.4

DESCRIPTIVE STATISTICS ON THE 24-HOUR INTAKE OF FOOD ENERGY, PROTEIN, FAT, CARBOHYDRATE, AND SODIUM--STUDENTS ELIGIBLE FOR FREE OR REDUCED-PRICE LUNCHES, AGES 5-10 YEARS (Weighted Data), Low-Income Subsample)

Dietary Item/ Population		Mean	Standard Deviation	First Quartile	Median	Third Quartile
Food Energy (Kcal)						
Male:	NSLP Participant	2002	739	1519	1901	2423
	Non-USDA Lunch	1982	908	1428	1819	2252
	No Lunch	1364**	705	721	1164	1658
Female:	NSLP Participant	1850	628	1416	1776	2190
	Non-USDA Lunch	1732	589	1241	1773	2073
	No Lunch	1210	333	1200	1200	1263
Protein (gm)						
Male:	NSLP Participant	79	31	56	76	99
	Non-USDA Lunch	68	32	43	64	80
	No Lunch	49**	28	33	39	64
Female:	NSLP Participant	68	26	50	64	82
	Non-USDA Lunch	57**	24	42	54	75
	No Lunch	36*	17	28	28	36
Fat (gm)						
Male:	NSLP Participant	82	36	57	74	103
	Non-USDA Lunch	77	36	49	71	97
	No Lunch	51**	26	33	45	84
Female:	NSLP Participant	73	33	51	68	88
	Non-USDA Lunch	68	27	51	68	83
	No Lunch	40	18	33	33	51
Carbohydrate (gm)						
Male:	NSLP Participant	242	96	170	229	293
	Non-USDA Lunch	262	136	199	219	277
	No Lunch	180*	108	79	153	218
Female:	NSLP Participant	236	91	176	221	284
	Non-USDA Lunch	228	90	165	227	276
	No Lunch	180	49	166	203	203
Sodium (mg)[1]						
Male:	NSLP Participant	2653	1562	1658	2311	3252
	Non-USDA Lunch	2449	1072	1734	2235	2840
	No Lunch	1897	699	1366	1851	2447
Female:	NSLP Participant	2380	1407	1570	2074	3023
	Non-USDA Lunch	2230	831	1564	2166	2777
	No Lunch	1279	564	1168	1168	1395

SOURCE: The Sodium and Macronutrient Content of USDA School Lunches, 1988. Data are from the National Evaluation of School Nutrition Programs, fall 1980.

NOTE: The low-income subsample consists of students from families whose incomes do not exceed 185 percent of the proverty guidelines.

[1]Does not include sodium obtained through the discretionary use of table salt.

*(**): Different from the mean intake of NSLP participants at the .05(.01) level of significance, using a two-tailed t-test.

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TABLE B.5

DESCRIPTIVE STATISTICS ON THE 24-HOUR INTAKE OF FOOD ENERGY, PROTEIN, FAT, CARBOHYDRATE, AND SODIUM--STUDENTS ELIGIBLE FOR FREE OR REDUCED-PRICE LUNCHES, AGES 11-14 YEARS
(Weighted Data, Low-Income Subsample)

Dietary Item/ Population		Mean	Standard Deviation	First Quartile	Median	Third Quartile
Food Energy (Kcal)						
Male:	NSLP Participant	2422	948	1781	2318	2875
	Non-USDA Lunch	2217	984	1571	2004	2697
	No Lunch	1732	843	1162	1726	1858
Female:	NSLP Participant	1925	787	1315	1749	2397
	Non-USDA Lunch	1834	733	1372	1783	2123
	No Lunch	1434*	836	1019	1122	1656
Protein (gm)						
Male:	NSLP Participant	89	40	61	85	106
	Non-USDA Lunch	77	34	54	75	98
	No Lunch	53*	24	39	39	64
Female:	NSLP Participant	70	28	47	66	88
	Non-USDA Lunch	68	31	46	61	88
	No Lunch	47**	41	27	34	54
Fat (gm)						
Male:	NSLP Participant	101	49	64	94	129
	Non-USDA Lunch	86	41	69	78	102
	No Lunch	61*	49	24	53	63
Female:	NSLP Participant	81	40	53	72	101
	Non-USDA Lunch	74	30	53	71	88
	No Lunch	62	43	35	56	76
Carbohydrate (gm)						
Male:	NSLP Participant	295	120	215	281	361
	Non-USDA Lunch	289	152	163	284	342
	No Lunch	249	99	200	281	281
Female:	NSLP Participant	234	104	157	223	285
	Non-USDA Lunch	230	112	161	214	268
	No Lunch	178*	93	132	151	169
Sodium (mg)[1]						
Male:	NSLP Participant	3264	2012	2039	2803	4186
	Non-USDA Lunch	3175	1584	2012	2952	3726
	No Lunch	3108	3024	1242	1476	3773
Female:	NSLP Participant	2405	1223	1516	2129	2969
	Non-USDA Lunch	2607	1436	1453	2350	3881
	No Lunch	1502**	1072	734	1407	1822

SOURCE: The Sodium and Macronutrient Content of USDA School Lunches, 1988. Data are from the National Evaluation of School Nutrition Programs, fall 1980.

NOTE: The low-income subsample consists of students from families whose incomes do not exceed 185 percent of the proverty guidelines.

[1]Does not include sodium obtained through the discretionary use of table salt.

*(**): Different from the mean intake of NSLP participants at the .05(.01) level of significance, using a two-tailed t-test.

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TABLE B.6

DESCRIPTIVE STATISTICS ON THE 24-HOUR INTAKE OF FOOD ENERGY, PROTEIN, FAT, CARBOHYDRATE, AND SODIUM--STUDENTS ELIGIBLE FOR FREE OR REDUCED-PRICE LUNCHES, AGES 15-21 YEARS
(Weighted Data, Low-Income Subsample)

Dietary Item/ Population		Mean	Standard Deviation	First Quartile	Median	Third Quartile
Food Energy (Kcal)						
Male:	NSLP Participant	3007	1273	2167	2728	3505
	Non-USDA Lunch	2708	829	2064	2819	3470
	No Lunch	2316	707	1882	2218	2571
Female:	NSLP Participant	1773	640	1367	1765	2136
	Non-USDA Lunch	1944	659	1488	1869	2306
	No Lunch	1235**	582	972	1187	1586
Protein (gm)						
Male:	NSLP Participant	111	51	72	99	141
	Non-USDA Lunch	95	33	67	101	118
	No Lunch	72*	34	47	54	106
Female:	NSLP Participant	66	25	49	64	82
	Non-USDA Lunch	66	31	45	62	74
	No Lunch	49**	27	24	45	68
Fat (gm)						
Male:	NSLP Participant	122	63	80	105	153
	Non-USDA Lunch	124	50	83	115	126
	No Lunch	94	45	69	75	111
Female:	NSLP Participant	72	33	53	69	90
	Non-USDA Lunch	86	34	57	86	99
	No Lunch	51**	27	31	51	66
Carbohydrate (gm)						
Male:	NSLP Participant	374	163	255	349	456
	Non-USDA Lunch	310*	100	217	277	396
	No Lunch	303	114	212	251	436
Female:	NSLP Participant	219	88	165	208	271
	Non-USDA Lunch	234	87	183	220	296
	No Lunch	149**	81	106	139	204
Sodium (mg)[1]						
Male:	NSLP Participant	3805	2197	2317	3052	5279
	Non-USDA Lunch	3675	1427	2778	3463	4176
	No Lunch	3033	1300	2365	2717	4247
Female:	NSLP Participant	2332	1274	1481	2212	3204
	Non-USDA Lunch	2506	1421	1600	2237	3066
	No Lunch	1383**	930	669	1116	1961

SOURCE: The Sodium and Macronutrient Content of USDA School Lunches, 1988. Data are from the National Evaluation of School Nutrition Programs, fall 1980.

NOTE: The low-income subsample consists of students from families whose incomes do not exceed 185 percent of the proverty guidelines.

[1]Does not include sodium obtained through the discretionary use of table salt.

*(**): Different from the mean intake of NSLP participants at the .05(.01) level of significance, using a two-tailed t-test.

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TABLE B.7

DESCRIPTIVE STATISTICS ON THE PROPORTION OF LUNCH FOOD ENERGY PROVIDED BY PROTEIN, FAT, AND CARBOHYDRATE--STUDENTS ELIGIBLE FOR FREE OR REDUCED-PRICE LUNCHES, AGES 5-10 YEARS
(Weighted Data, Low-Income Subsample)

Macronutrient/ Population		Mean	Standard Deviation	First Quartile	Median	Third Quartile
Proportion of Lunch Energy from Protein						
Male:	NSLP Participant	18.1	6.6	14.2	17.0	20.1
	Non-USDA Lunch	12.7**	4.4	9.9	11.5	16.0
Female:	NSLP Participant	17.0	6.1	13.2	16.1	19.5
	Non-USDA Lunch	13.4**	5.4	9.4	12.2	16.8
Proportion of Lunch Energy from Fat						
Male:	NSLP Participant	38.3	8.2	32.8	38.3	44.0
	Non-USDA Lunch	39.0	10.9	30.2	39.0	46.6
Female:	NSLP Participant	36.9	9.2	31.4	37.0	43.5
	Non-USDA Lunch	36.4	12.1	26.9	36.1	45.1
Proportion of Lunch Energy from Carbohydrate						
Male:	NSLP Participant	43.6	9.9	37.2	43.9	50.4
	Non-USDA Lunch	48.3	13.7	38.4	47.5	58.3
Female:	NSLP Participant	46.0	11.9	37.4	46.1	53.7
	Non-USDA Lunch	50.2	14.2	42.0	48.9	61.5

SOURCE: The Sodium and Macronutrient Content of USDA School Lunches, 1988. Data are from the National Evaluation of School Nutrition Programs, fall 1980.

NOTE: The low-income subsample consists of students from families whose incomes do not exceed 185 percent of the proverty guidelines.

*(**): Different from the mean intake of NSLP participants at the .05(.01) level of significance, using a two-tailed t-test.

TABLE B.8

DESCRIPTIVE STATISTICS ON THE PROPORTION OF LUNCH FOOD ENERGY PROVIDED BY PROTEIN, FAT, AND CARBOHYDRATE--STUDENTS ELIGIBLE FOR FREE OR REDUCED-PRICE LUNCHES, AGES 11-14 YEARS
(Weighted Data, Low-Income Subsample)

Macronutrient/ Population		Mean	Standard Deviation	First Quartile	Median	Third Quartile
Proportion of Lunch Energy from Protein						
Male:	NSLP Participant	17.1	5.6	13.6	16.4	19.4
	Non-USDA Lunch	12.2**	5.3	8.8	12.7	16.9
Female:	NSLP Participant	16.6	4.8	13.1	16.1	19.5
	Non-USDA Lunch	13.7**	7.3	9.1	13.1	16.7
Proportion of Lunch Energy from Fat						
Male:	NSLP Participant	38.7	9.9	32.6	38.5	44.3
	Non-USDA Lunch	36.3	13.2	31.7	40.9	46.7
Female:	NSLP Participant	39.7	8.9	34.1	39.7	46.6
	Non-USDA Lunch	37.3	13.0	29.3	37.5	46.1
Proportion of Lunch Energy from Carbohydrate						
Male:	NSLP Participant	44.2	11.3	37.9	44.7	51.0
	Non-USDA Lunch	51.5*	16.7	40.1	44.5	56.3
Female:	NSLP Participant	43.7	10.4	36.4	42.6	50.4
	Non-USDA Lunch	49.0*	15.9	39.3	49.7	57.6

SOURCE: The Sodium and Macronutrient Content of USDA School Lunches, 1988. Data are from the National Evaluation of School Nutrition Programs, fall 1980.

NOTE: The low-income subsample consists of students from families whose incomes do not exceed 185 percent of the proverty guidelines.

*(**): Different from the mean intake of NSLP participants at the .05(.01) level of significance, using a two-tailed t-test.

TABLE B.9

DESCRIPTIVE STATISTICS ON THE PROPORTION OF LUNCH FOOD ENERGY PROVIDED BY PROTEIN, FAT, AND CARBOHYDRATE--STUDENTS ELIGIBLE FOR FREE OR REDUCED-PRICE LUNCHES, AGES 15-21 YEARS
(Weighted Data, Low-Income Subsample)

Macronutrient/ Population		Mean	Standard Deviation	First Quartile	Median	Third Quartile
Proportion of Lunch Energy from Protein						
Male:	NSLP Participant	16.7	4.8	13.9	16.8	19.5
	Non-USDA Lunch	13.5*	5.4	9.5	14.9	16.9
Female:	NSLP Participant	17.1	6.3	13.2	15.6	20.5
	Non-USDA Lunch	13.0**	6.5	8.6	12.7	15.7
Proportion of Lunch Energy from Fat						
Male:	NSLP Participant	37.6	8.5	31.2	38.0	43.0
	Non-USDA Lunch	38.2	14.9	32.5	41.0	50.3
Female:	NSLP Participant	37.3	10.2	31.2	38.1	44.0
	Non-USDA Lunch	39.3	10.2	33.3	38.8	45.4
Proportion of Lunch Energy from Carbohydrate						
Male:	NSLP Participant	45.7	10.9	37.9	45.8	52.2
	Non-USDA Lunch	48.4	18.3	34.4	47.0	55.7
Female:	NSLP Participant	45.6	13.2	38.2	45.0	53.4
	Non-USDA Lunch	47.7	12.6	38.2	46.8	54.6

SOURCE: The Sodium and Macronutrient Content of USDA School Lunches, 1988. Data are from the National Evaluation of School Nutrition Programs, fall 1980.

NOTE: The low-income subsample consists of students from families whose incomes do not exceed 185 percent of the proverty guidelines.

*(**): Different from the mean intake of NSLP participants at the .05(.01) level of significance, using a two-tailed t-test.

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TABLE B.10

DESCRIPTIVE STATISTICS ON THE PROPORTION OF 24-HOUR FOOD ENERGY PROVIDED BY PROTEIN, FAT, AND CARBOHYDRATE--STUDENTS ELIGIBLE FOR FREE OR REDUCED-PRICE LUNCHES, AGES 5-10 YEARS
(Weighted Data, Low-Income Subsample)

Macronutrient/ Population		Mean	Standard Deviation	First Quartile	Median	Third Quartile
Proportion of 24-Hour Energy from Protein						
Male:	NSLP Participant	15.9	3.8	13.4	15.3	18.0
	Non-USDA Lunch	13.6**	3.2	11.9	13.5	15.3
	No Lunch	14.4	3.7	13.1	14.5	18.3
Female:	NSLP Participant	14.8	3.8	12.4	14.3	16.9
	Non-USDA Lunch	13.0**	3.7	10.1	12.7	14.9
	No Lunch	11.8	4.0	9.0	9.0	13.7
Proportion of 24-Hour Energy from Fat						
Male:	NSLP Participant	36.2	6.0	32.5	35.5	40.1
	Non-USDA Lunch	34.4	6.9	30.1	34.0	38.9
	No Lunch	34.5	6.4	30.2	34.6	41.4
Female:	NSLP Participant	34.8	7.1	30.2	34.1	38.6
	Non-USDA Lunch	35.0	7.6	30.2	35.3	39.3
	No Lunch	29.0	6.9	24.5	24.5	34.3
Proportion of 24-Hour Energy from Carbohydrate						
Male:	NSLP Participant	48.0	7.6	43.0	48.0	52.5
	Non-USDA Lunch	52.0*	8.5	45.6	52.9	57.0
	No Lunch	51.1	7.0	50.3	52.0	54.3
Female:	NSLP Participant	50.4	8.6	45.2	50.9	56.0
	Non-USDA Lunch	52.0	10.1	47.0	52.4	59.2
	No Lunch	59.2	9.6	53.7	66.5	66.5

SOURCE: The Sodium and Macronutrient Content of USDA School Lunches, 1988. Data are from the National Evaluation of School Nutrition Programs, fall 1980.

NOTE: The low-income subsample consists of students from families whose incomes do not exceed 185 percent of the proverty guidelines.

*(**): Different from the mean intake of NSLP participants at the .05(.01) level of significance, using a two-tailed t-test.

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TABLE B.11

DESCRIPTIVE STATISTICS ON THE PROPORTION OF 24-HOUR FOOD ENERGY PROVIDED BY PROTEIN, FAT, AND CARBOHYDRATE--STUDENTS ELIGIBLE FOR FREE OR REDUCED-PRICE LUNCHES, AGES 11-14 YEARS
(Weighted Data, Low-Income Subsample)

Macronutrient/ Population		Mean	Standard Deviation	First Quartile	Median	Third Quartile
Proportion of 24-Hour Energy from Protein						
Male:	NSLP Participant	14.8	4.0	11.9	14.3	16.7
	Non-USDA Lunch	14.1	3.9	11.4	14.0	17.3
	No Lunch	13.3	6.1	8.9	10.4	16.3
Female:	NSLP Participant	14.9	4.0	11.8	14.8	17.2
	Non-USDA Lunch	14.9	3.9	12.0	15.1	16.8
	No Lunch	12.7*	5.3	8.6	11.9	15.9
Proportion of 24-Hour Energy from Fat						
Male:	NSLP Participant	36.5	7.5	31.8	36.5	41.3
	Non-USDA Lunch	35.3	8.1	30.3	37.9	42.0
	No Lunch	28.5**	8.9	22.6	27.0	31.9
Female:	NSLP Participant	37.0	7.0	32.6	36.7	41.4
	Non-USDA Lunch	36.0	6.6	31.1	36.5	41.5
	No Lunch	37.3	7.5	33.8	40.8	41.8
Proportion of 24-Hour Energy from Carbohydrate						
Male:	NSLP Participant	48.7	8.6	42.8	49.3	54.9
	Non-USDA Lunch	50.6	10.5	42.9	46.6	57.2
	No Lunch	58.2**	10.3	52.6	59.5	64.2
Female:	NSLP Participant	48.2	8.1	43.2	47.7	52.9
	Non-USDA Lunch	49.1	8.8	43.8	48.8	55.6
	No Lunch	50.0	10.9	41.5	46.7	54.7

SOURCE: The Sodium and Macronutrient Content of USDA School Lunches, 1988. Data are from the National Evaluation of School Nutrition Programs, fall 1980.

NOTE: The low-income subsample consists of students from families whose incomes do not exceed 185 percent of the proverty guidelines.

*(**): Different from the mean intake of NSLP participants at the .05(.01) level of significance, using a two-tailed t-test.

TABLE B.12

DESCRIPTIVE STATISTICS ON THE PROPORTION OF 24-HOUR FOOD ENERGY PROVIDED BY PROTEIN, FAT, AND CARBOHYDRATE--STUDENTS ELIGIBLE FOR FREE OR REDUCED-PRICE LUNCHES, AGES 15-21 YEARS
(Weighted Data, Low-Income Subsample)

Macronutrient/ Population		Mean	Standard Deviation	First Quartile	Median	Third Quartile
Proportion of 24-Hour Energy from Protein						
Male:	NSLP Participant	14.9	4.1	11.9	14.2	17.6
	Non-USDA Lunch	14.0	3.4	11.4	13.6	16.7
	No Lunch	12.6	5.5	7.9	12.0	15.8
Female:	NSLP Participant	15.1	4.3	12.2	14.4	17.3
	Non-USDA Lunch	13.3*	4.0	10.6	12.4	15.4
	No Lunch	16.4	7.1	11.3	14.8	21.2
Proportion of 24-Hour Energy from Fat						
Male:	NSLP Participant	35.4	6.7	30.6	35.3	39.8
	Non-USDA Lunch	39.7*	8.2	33.2	40.2	45.5
	No Lunch	35.4	9.9	23.8	34.8	45.0
Female:	NSLP Participant	35.7	7.5	31.6	36.2	41.2
	Non-USDA Lunch	38.8*	6.0	35.3	37.5	43.1
	No Lunch	36.2	8.7	30.4	36.1	43.0
Proportion of 24-Hour Energy from Carbohydrate						
Male:	NSLP Participant	49.7	8.5	43.4	49.7	54.7
	Non-USDA Lunch	46.3	9.8	41.0	46.5	51.8
	No Lunch	51.9	13.2	41.5	51.2	69.0
Female:	NSLP Participant	49.2	9.1	43.3	47.9	54.4
	Non-USDA Lunch	47.9	8.0	41.8	47.2	51.9
	No Lunch	47.4	11.8	40.2	44.4	55.8

SOURCE: The Sodium and Macronutrient Content of USDA School Lunches, 1988. Data are from the National Evaluation of School Nutrition Programs, fall 1980.

NOTE: The low-income subsample consists of students from families whose incomes do not exceed 185 percent of the proverty guidelines.

*(**): Different from the mean intake of NSLP participants at the .05(.01) level of significance, using a two-tailed t-test.